

Heads or Tails

YOU WIN WITH HENRY



Wing Cap Valve for Refrigeration
and Air Conditioning, Sizes 1/2 to 4 in.
O.D. 1/2, 1, 2, 3, 4, 5, 6, 8, 10, 12, 14, 16, 18, 20, 24, 28, 30, 36, 42, 48, 54, 60, 66, 72, 78, 84, 90, 96, 102, 108, 114, 120, 126, 132, 138, 144, 150, 156, 162, 168, 174, 180, 186, 192, 198, 204, 210, 216, 222, 228, 234, 240, 246, 252, 258, 264, 270, 276, 282, 288, 294, 300, 306, 312, 318, 324, 330, 336, 342, 348, 354, 360, 366, 372, 378, 384, 390, 396, 402, 408, 414, 420, 426, 432, 438, 444, 450, 456, 462, 468, 474, 480, 486, 492, 498, 504, 510, 516, 522, 528, 534, 540, 546, 552, 558, 564, 570, 576, 582, 588, 594, 600, 606, 612, 618, 624, 630, 636, 642, 648, 654, 660, 666, 672, 678, 684, 690, 696, 702, 708, 714, 720, 726, 732, 738, 744, 750, 756, 762, 768, 774, 780, 786, 792, 798, 804, 810, 816, 822, 828, 834, 840, 846, 852, 858, 864, 870, 876, 882, 888, 894, 900, 906, 912, 918, 924, 930, 936, 942, 948, 954, 960, 966, 972, 978, 984, 990, 996, 1002, 1008, 1014, 1020, 1026, 1032, 1038, 1044, 1050, 1056, 1062, 1068, 1074, 1080, 1086, 1092, 1098, 1104, 1110, 1116, 1122, 1128, 1134, 1140, 1146, 1152, 1158, 1164, 1170, 1176, 1182, 1188, 1194, 1200, 1206, 1212, 1218, 1224, 1230, 1236, 1242, 1248, 1254, 1260, 1266, 1272, 1278, 1284, 1290, 1296, 1302, 1308, 1314, 1320, 1326, 1332, 1338, 1344, 1350, 1356, 1362, 1368, 1374, 1380, 1386, 1392, 1398, 1404, 1410, 1416, 1422, 1428, 1434, 1440, 1446, 1452, 1458, 1464, 1470, 1476, 1482, 1488, 1494, 1500, 1506, 1512, 1518, 1524, 1530, 1536, 1542, 1548, 1554, 1560, 1566, 1572, 1578, 1584, 1590, 1596, 1602, 1608, 1614, 1620, 1626, 1632, 1638, 1644, 1650, 1656, 1662, 1668, 1674, 1680, 1686, 1692, 1698, 1704, 1710, 1716, 1722, 1728, 1734, 1740, 1746, 1752, 1758, 1764, 1770, 1776, 1782, 1788, 1794, 1800, 1806, 1812, 1818, 1824, 1830, 1836, 1842, 1848, 1854, 1860, 1866, 1872, 1878, 1884, 1890, 1896, 1902, 1908, 1914, 1920, 1926, 1932, 1938, 1944, 1950, 1956, 1962, 1968, 1974, 1980, 1986, 1992, 1998, 2004, 2010, 2016, 2022, 2028, 2034, 2040, 2046, 2052, 2058, 2064, 2070, 2076, 2082, 2088, 2094, 2100, 2106, 2112, 2118, 2124, 2130, 2136, 2142, 2148, 2154, 2160, 2166, 2172, 2178, 2184, 2190, 2196, 2202, 2208, 2214, 2220, 2226, 2232, 2238, 2244, 2250, 2256, 2262, 2268, 2274, 2280, 2286, 2292, 2298, 2304, 2310, 2316, 2322, 2328, 2334, 2340, 2346, 2352, 2358, 2364, 2370, 2376, 2382, 2388, 2394, 2400, 2406, 2412, 2418, 2424, 2430, 2436, 2442, 2448, 2454, 2460, 2466, 2472, 2478, 2484, 2490, 2496, 2502, 2508, 2514, 2520, 2526, 2532, 2538, 2544, 2550, 2556, 2562, 2568, 2574, 2580, 2586, 2592, 2598, 2604, 2610, 2616, 2622, 2628, 2634, 2640, 2646, 2652, 2658, 2664, 2670, 2676, 2682, 2688, 2694, 2700, 2706, 2712, 2718, 2724, 2730, 2736, 2742, 2748, 2754, 2760, 2766, 2772, 2778, 2784, 2790, 2796, 2802, 2808, 2814, 2820, 2826, 2832, 2838, 2844, 2850, 2856, 2862, 2868, 2874, 2880, 2886, 2892, 2898, 2904, 2910, 2916, 2922, 2928, 2934, 2940, 2946, 2952, 2958, 2964, 2970, 2976, 2982, 2988, 2994, 3000, 3006, 3012, 3018, 3024, 3030, 3036, 3042, 3048, 3054, 3060, 3066, 3072, 3078, 3084, 3090, 3096, 3102, 3108, 3114, 3120, 3126, 3132, 3138, 3144, 3150, 3156, 3162, 3168, 3174, 3180, 3186, 3192, 3198, 3204, 3210, 3216, 3222, 3228, 3234, 3240, 3246, 3252, 3258, 3264, 3270, 3276, 3282, 3288, 3294, 3300, 3306, 3312, 3318, 3324, 3330, 3336, 3342, 3348, 3354, 3360, 3366, 3372, 3378, 3384, 3390, 3396, 3402, 3408, 3414, 3420, 3426, 3432, 3438, 3444, 3450, 3456, 3462, 3468, 3474, 3480, 3486, 3492, 3498, 3504, 3510, 3516, 3522, 3528, 3534, 3540, 3546, 3552, 3558, 3564, 3570, 3576, 3582, 3588, 3594, 3600, 3606, 3612, 3618, 3624, 3630, 3636, 3642, 3648, 3654, 3660, 3666, 3672, 3678, 3684, 3690, 3696, 3702, 3708, 3714, 3720, 3726, 3732, 3738, 3744, 3750, 3756, 3762, 3768, 3774, 3780, 3786, 3792, 3798, 3804, 3810, 3816, 3822, 3828, 3834, 3840, 3846, 3852, 3858, 3864, 3870, 3876, 3882, 3888, 3894, 3900, 3906, 3912, 3918, 3924, 3930, 3936, 3942, 3948, 3954, 3960, 3966, 3972, 3978, 3984, 3990, 3996, 4002, 4008, 4014, 4020, 4026, 4032, 4038, 4044, 4050, 4056, 4062, 4068, 4074, 4080, 4086, 4092, 4098, 4104, 4110, 4116, 4122, 4128, 4134, 4140, 4146, 4152, 4158, 4164, 4170, 4176, 4182, 4188, 4194, 4200, 4206, 4212, 4218, 4224, 4230, 4236, 4242, 4248, 4254, 4260, 4266, 4272, 4278, 4284, 4290, 4296, 4302, 4308, 4314, 4320, 4326, 4332, 4338, 4344, 4350, 4356, 4362, 4368, 4374, 4380, 4386, 4392, 4398, 4404, 4410, 4416, 4422, 4428, 4434, 4440, 4446, 4452, 4458, 4464, 4470, 4476, 4482, 4488, 4494, 4500, 4506, 4512, 4518, 4524, 4530, 4536, 4542, 4548, 4554, 4560, 4566, 4572, 4578, 4584, 4590, 4596, 4602, 4608, 4614, 4620, 4626, 4632, 4638, 4644, 4650, 4656, 4662, 4668, 4674, 4680, 4686, 4692, 4698, 4704, 4710, 4716, 4722, 4728, 4734, 4740, 4746, 4752, 4758, 4764, 4770, 4776, 4782, 4788, 4794, 4800, 4806, 4812, 4818, 4824, 4830, 4836, 4842, 4848, 4854, 4860, 4866, 4872, 4878, 4884, 4890, 4896, 4902, 4908, 4914, 4920, 4926, 4932, 4938, 4944, 4950, 4956, 4962, 4968, 4974, 4980, 4986, 4992, 4998, 5004, 5010, 5016, 5022, 5028, 5034, 5040, 5046, 5052, 5058, 5064, 5070, 5076, 5082, 5088, 5094, 5100, 5106, 5112, 5118, 5124, 5130, 5136, 5142, 5148, 5154, 5160, 5166, 5172, 5178, 5184, 5190, 5196, 5202, 5208, 5214, 5220, 5226, 5232, 5238, 5244, 5250, 5256, 5262, 5268, 5274, 5280, 5286, 5292, 5298, 5304, 5310, 5316, 5322, 5328, 5334, 5340, 5346, 5352, 5358, 5364, 5370, 5376, 5382, 5388, 5394, 5400, 5406, 5412, 5418, 5424, 5430, 5436, 5442, 5448, 5454, 5460, 5466, 5472, 5478, 5484, 5490, 5496, 5502, 5508, 5514, 5520, 5526, 5532, 5538, 5544, 5550, 5556, 5562, 5568, 5574, 5580, 5586, 5592, 5598, 5604, 5610, 5616, 5622, 5628, 5634, 5640, 5646, 5652, 5658, 5664, 5670, 5676, 5682, 5688, 5694, 5700, 5706, 5712, 5718, 5724, 5730, 5736, 5742, 5748, 5754, 5760, 5766, 5772, 5778, 5784, 5790, 5796, 5802, 5808, 5814, 5820, 5826, 5832, 5838, 5844, 5850, 5856, 5862, 5868, 5874, 5880, 5886, 5892, 5898, 5904, 5910, 5916, 5922, 5928, 5934, 5940, 5946, 5952, 5958, 5964, 5970, 5976, 5982, 5988, 5994, 6000, 6006, 6012, 6018, 6024, 6030, 6036, 6042, 6048, 6054, 6060, 6066, 6072, 6078, 6084, 6090, 6096, 6102, 6108, 6114, 6120, 6126, 6132, 6138, 6144, 6150, 6156, 6162, 6168, 6174, 6180, 6186, 6192, 6198, 6204, 6210, 6216, 6222, 6228, 6234, 6240, 6246, 6252, 6258, 6264, 6270, 6276, 6282, 6288, 6294, 6300, 6306, 6312, 6318, 6324, 6330, 6336, 6342, 6348, 6354, 6360, 6366, 6372, 6378, 6384, 6390, 6396, 6402, 6408, 6414, 6420, 6426, 6432, 6438, 6444, 6450, 6456, 6462, 6468, 6474, 6480, 6486, 6492, 6498, 6504, 6510, 6516, 6522, 6528, 6534, 6540, 6546, 6552, 6558, 6564, 6570, 6576, 6582, 6588, 6594, 6600, 6606, 6612, 6618, 6624, 6630, 6636, 6642, 6648, 6654, 6660, 6666, 6672, 6678, 6684, 6690, 6696, 6702, 6708, 6714, 6720, 6726, 6732, 6738, 6744, 6750, 6756, 6762, 6768, 6774, 6780, 6786, 6792, 6798, 6804, 6810, 6816, 6822, 6828, 6834, 6840, 6846, 6852, 6858, 6864, 6870, 6876, 6882, 6888, 6894, 6900, 6906, 6912, 6918, 6924, 6930, 6936, 6942, 6948, 6954, 6960, 6966, 6972, 6978, 6984, 6990, 6996, 7002, 7008, 7014, 7020, 7026, 7032, 7038, 7044, 7050, 7056, 7062, 7068, 7074, 7080, 7086, 7092, 7098, 7104, 7110, 7116, 7122, 7128, 7134, 7140, 7146, 7152, 7158, 7164, 7170, 7176, 7182, 7188, 7194, 7200, 7206, 7212, 7218, 7224, 7230, 7236, 7242, 7248, 7254, 7260, 7266, 7272, 7278, 7284, 7290, 7296, 7302, 7308, 7314, 7320, 7326, 7332, 7338, 7344, 7350, 7356, 7362, 7368, 7374, 7380, 7386, 7392, 7398, 7404, 7410, 7416, 7422, 7428, 7434, 7440, 7446, 7452, 7458, 7464, 7470, 7476, 7482, 7488, 7494, 7500, 7506, 7512, 7518, 7524, 7530, 7536, 7542, 7548, 7554, 7560, 7566, 7572, 7578, 7584, 7590, 7596, 7602, 7608, 7614, 7620, 7626, 7632, 7638, 7644, 7650, 7656, 7662, 7668, 7674, 7680, 7686, 7692, 7698, 7704, 7710, 7716, 7722, 7728, 7734, 7740, 7746, 7752, 7758, 7764, 7770, 7776, 7782, 7788, 7794, 7800, 7806, 7812, 7818, 7824, 7830, 7836, 7842, 7848, 7854, 7860, 7866, 7872, 7878, 7884, 7890, 7896, 7902, 7908, 7914, 7920, 7926, 7932, 7938, 7944, 7950, 7956, 7962, 7968, 7974, 7980, 7986, 7992, 7998, 8004, 8010, 8016, 8022, 8028, 8034, 8040, 8046, 8052, 8058, 8064, 8070, 8076, 8082, 8088, 8094, 8100, 8106, 8112, 8118, 8124, 8130, 8136, 8142, 8148, 8154, 8160, 8166, 8172, 8178, 8184, 8190, 8196, 8202, 8208, 8214, 8220, 8226, 8232, 8238, 8244, 8250, 8256, 8262, 8268, 8274, 8280, 8286, 8292, 8298, 8304, 8310, 8316, 8322, 8328, 8334, 8340, 8346, 8352, 8358, 8364, 8370, 8376, 8382, 8388, 8394, 8400, 8406, 8412, 8418, 8424, 8430, 8436, 8442, 8448, 8454, 8460, 8466, 8472, 8478, 8484, 8490, 8496, 8502, 8508, 8514, 8520, 8526, 8532, 8538, 8544, 8550, 8556, 8562, 8568, 8574, 8580, 8586, 8592, 8598, 8604, 8610, 8616, 8622, 8628, 8634, 8640, 8646, 8652, 8658, 8664, 8670, 8676, 8682, 8688, 8694, 8700, 8706, 8712, 8718, 8724, 8730, 8736, 8742, 8748, 8754, 8760, 8766, 8772, 8778, 8784, 8790, 8796, 8802, 8808, 8814, 8820, 8826, 8832, 8838, 8844, 8850, 8856, 8862, 8868, 8874, 8880, 8886, 8892, 8898, 8904, 8910, 8916, 8922, 8928, 8934, 8940, 8946, 8952, 8958, 8964, 8970, 8976, 8982, 8988, 8994, 9000, 9006, 9012, 9018, 9024, 9030, 9036, 9042, 9048, 9054, 9060, 9066, 9072, 9078, 9084, 9090, 9096, 9102, 9108, 9114, 9120, 9126, 9132, 9138, 9144, 9150, 9156, 9162, 9168, 9174, 9180, 9186, 9192, 9198, 9204, 9210, 9216, 9222, 9228, 9234, 9240, 9246, 9252, 9258, 9264, 9270, 9276, 9282, 9288, 9294, 9300, 9306, 9312, 9318, 9324, 9330, 9336, 9342, 9348, 9354, 9360, 9366, 9372, 9378, 9384, 9390, 9396, 9402, 9408, 9414, 9420, 9426, 9432, 9438, 9444, 9450, 9456, 9462, 9468, 9474, 9480, 9486, 9492, 9498, 9504, 9510, 9516, 9522, 9528, 9534, 9540, 9546, 9552, 9558, 9564, 9570, 9576, 9582, 9588, 9594, 9600, 9606, 9612, 9618, 9624, 9630, 9636, 9642, 9648, 9654, 9660, 9666, 9672, 9678, 9684, 9690, 9696, 9702, 9708, 9714, 9720, 9726, 9732, 9738, 9744, 9750, 9756, 9762, 9768, 9774, 9780, 9786, 9792, 9798, 9804, 9810, 9816, 9822, 9828, 9834, 9840, 9846, 9852, 9858, 9864, 9870, 9876, 9882, 9888, 9894, 9900, 9906, 9912, 9918, 9924, 9930, 9936, 9942, 9948, 9954, 9960, 9966, 9972, 9978, 9984, 9990, 9996, 10002, 10008, 10014, 10020, 10026, 10032, 10038, 10044, 10050, 10056, 10062, 10068, 10074, 10080, 10086, 10092, 10098, 10104, 10110, 10116, 10122, 10128, 10134, 10140, 10146, 10152, 10158, 10164, 10170, 10176, 10182, 10188, 10194, 10200, 10206, 10212, 10218, 10224, 10230, 10236, 10242, 10248, 10254, 10260, 10266, 10272, 10278, 10284, 10290, 10296, 10302, 10308, 10314, 10320, 10326, 10332, 10338, 10344, 10350, 10356, 10362, 10368, 10374, 10380, 10386, 10392, 10398, 10404, 10410, 10416, 10422, 10428, 10434, 10440, 10446, 10452, 10458, 10464, 10470, 10476, 10482, 10488, 10494, 10500, 10506, 10512, 10518, 10524, 10530, 10536, 10542, 10548, 10554, 10560, 10566, 10572, 10578, 10584, 10590, 10596, 10602, 10608, 10614, 10620, 10626, 10632, 10638, 10644, 10650, 10656, 10662, 10668, 10674, 10680, 10686, 10692, 10698, 10704, 10710, 10716, 10722, 10728, 10734, 10740, 10746, 10752, 10758, 10764, 10770, 10776, 10782, 10788, 10794, 10800, 10806, 10812, 10818, 10824, 10830, 10836, 10842, 10848, 10854, 10860, 10866, 10872, 10878, 10884, 10890, 10896, 10902, 10908, 10914, 10920, 10926, 10932, 10938, 10944, 10950, 10956, 10962, 10968, 10974, 10980, 10986, 10992, 10998, 11004, 11010, 11016, 11022, 11028, 11034, 11040, 11046, 11052, 11058, 11064, 11070, 11076, 11082, 11088, 11094, 11100, 11106, 11112, 11118, 11124, 11130, 11136, 11142, 11148, 11154, 11160, 11166, 11172, 11178, 11184, 11190, 11196, 11202, 11208, 11214, 11220, 11226, 11232, 11238, 11244, 11250, 11256, 11262, 11268, 11274, 11280, 11286, 11292, 11298, 11304, 11310, 11316, 11322, 11328, 11334, 11340, 11346, 11352, 11358, 11364, 11370, 11376, 11382, 11388, 11394, 11400, 11406, 11412, 11418, 11424, 11430, 11436, 11442, 11448, 11454, 11460, 11466, 11472, 11478, 11484, 11490, 11496, 11502, 11508, 11514, 11520, 11526, 11532, 11538, 11544, 11550, 11556, 11562, 11568, 11574, 11580, 11586, 11592, 11598, 11604, 11610, 11616, 11622, 11628, 11634, 11640, 11646, 11652, 11658, 11664, 11670, 11676, 11682, 11688, 11694, 11700, 11706, 11712, 11718, 11724, 11730, 11736, 11742, 11748, 11754, 11760, 11766, 11772, 11778, 11784, 11790, 11796, 11802, 11808, 11814, 11820, 11826, 11832, 11838, 11844, 11850, 11856, 11862, 11868, 11874, 11880, 11886, 11892, 11898, 11904, 11910, 11916, 11922, 11928, 11934, 119

Air Conditioning & Refrigeration News

The Newspaper of the Industry

Trade Mark Registered U. S. Patent Office. Established 1926 as Electric Refrigeration News
Member Audit Bureau of Circulations. Member Associated Business Papers.

Written to Be Read on Arrival

VOL. 25, No. 8, SERIAL No. 501
ISSUED EVERY WEDNESDAYEntered as second-class
matter Aug. 1, 1927

DETROIT, MICHIGAN, OCTOBER 26, 1938

Copyright, 1938, by
Business News Pub. Co.FOUR DOLLARS PER YEAR
TWENTY CENTS PER COPY

THE COLD CANVASS

By B. T. Umor

Society Page

Mrs. Myrtle F. Honigsberg and Mr. Clarence F. Pratt announce their marriage on Thursday, the twentieth of October, nineteen hundred and thirty eight, at Reno, Nevada.

At Home after November the first, Farrelworth apartments, 601 O'Farrell street, San Francisco, California.

If it is possible that there is someone in the audience who has never heard of Clarence F. "Sandy" Pratt, let him step up and be informed that "Sandy" is president of the California Refrigerator Co., that he is one of the best-known refrigeration jobbers in the business, that he is chief instigator of the California Outdoor Christmas Tree Association, and that he is the founder of sunrise Easter services in California.

In an industry which has plenty of showmen, "Sandy" stands out like a brown derby in a flock of top hats. And everybody who knows him hopes he will be very happy in his role as a bridegroom.

And Now, It's

Hair Conditioning!

With everything from shoes to automobile tires proselytizing the term, "air conditioning," a new hair tonic preparation comes boldly out and claims that its service is "hair conditioning."

And any time, we fear, Walter Winchell will supplant his famous "infanticiding" with "hair conditioned."

The Corrigan Influence

Home economists for West Penn Power Co. always knew electric ranges were cheap to operate. . . but they won't be able to convince

D'Arcy To Head Crosley's Private Brand Sales

CINCINNATI—Appointment of H. A. D'Arcy, long active in the electric refrigeration industry in various executive capacities, as sales manager of the private brand division of Crosley Radio Corp. has been announced by J. P. Rogers, vice president in charge of the division.

Mr. D'Arcy organized Kelvinator Corp.'s first retail commercial sales

Brunner Appoints Three District Sales Heads

UTICA, N. Y.—Appointment of George W. Mathews, Howard T. Noone, and W. S. McLeod as district sales representatives for Brunner Mfg. Co., maker of compressors for refrigeration and air-conditioning applications, has been announced by B. J. Scholl, sales manager of the company.

Mr. Mathews, who will cover Michigan, northern Ohio, and northern Indiana, will headquarter in Detroit. A member of the A.S.R.E., he has been connected with some phase of commercial refrigeration activity for more than 20 years.

He entered the refrigeration industry following the World war, when he became associated with Baker Ice Machine Co., Omaha, Neb. There he devoted his efforts to the design, construction, and sale of ice plant, cold storage plant, and hotel refrigeration.

(Concluded on Page 5, Column 1)

Extension of Farm Market Discussed At Food Meeting

By Phil B. Redeker

KNOXVILLE, Tenn.—Most up-to-date information available on production and distribution of frozen foods, methods of extending the use of refrigeration on farms, and the construction and operation of refrigerated locker storage systems was dispensed at the Food Preservation Conference held last Thursday and Friday here by the University of Tennessee in cooperation with the American Society of Refrigerating Engineers.

More than 125 persons registered for the conference, and the attendance was close to 100% at all sessions. The attendance was highly diversified in its character, and included refrigeration engineers and dealers, refrigerated locker plant engineers and authorities, professors and extension workers from the university, representatives of farm cooperatives and other farm organizations, cold storage workers and meat locker executives, and representatives of such government agencies as the Tennessee Valley Authority, Rural Electrification Administration, and the Farm Credit Administration.

In his talk at the opening session on "Trend of Refrigeration Toward Food Producing Regions," David L. Fiske, executive secretary of the

(Concluded on Page 10, Column 1)

Stuart New Advertising Mgr. of Kelvinator

DETROIT—J. Nelson Stuart, until recently advertising and sales promotion manager of the Delaware, Lackawanna & Western Coal Co., has been appointed director of advertising and sales promotion of the Kelvinator division of Nash-Kelvinator Corp.

Announcement of the appointment was made by Henry W. Burritt, Kelvinator vice president in charge of sales.

A newcomer to the appliance merchandising field, Mr. Stuart was with Delaware, Lackawanna & Western for seven years, during which time he was credited with several "firsts" in the merchandising of solid fuel.

Among them were the introduction of the sound slide film for the training of retail personnel, and the inauguration of a radio chain broadcast. He also set up training classes in which retail fuel employees were taught the fundamentals of dealing with customers.

He is credited with instituting a

(Concluded on Page 12, Column 3)

Crosley Sets Up Trade-In Policy On Nine Models

Dealers Experiment With Maximum Allowances In New York City

NEW YORK CITY—An experimental trade-in policy involving seven 1938 models and two 1937 special models has been launched in the New York territory by Crosley Distributing Corp., which handles the Crosley line of refrigerators here.

A list of maximum trade-in allowances has been established for these nine models, and dealers are beginning to contact their old Crosley customers by letter and by personal calls, advising them of the new trade-in offer. A circular letter also is being sent out to old Crosley customers by the local branch office of the company.

No newspaper advertising is being used as yet, but dealers have been furnished with promotional material for window display.

When the plan was presented to dealers last week at a luncheon at the Belmont Plaza hotel, it was announced that the policy was merely being tried out, and that the offer could be withdrawn at any time upon 10-days' notice.

Dealers receiving Crosley refrigerators on trade-ins may have the units reconditioned by the Crosley service department for \$20, or may sell them to the service department

(Concluded on Page 12, Column 2)

Dennison To Manage Universal Cooler's Household Sales

DETROIT—Appointment of W. H. Dennison as sales manager of domestic refrigeration for Universal Cooler Corp. has been announced by Frank S. McNeal, president.

Mr. Dennison, who replaces H. A. D'Arcy (now with Crosley Radio Corp.), was sales manager of the department store division of Norge division, Borg-Warner Corp. for five years. For the past year he has been sales manager of Borg-Warner's Detroit Vapor Stove division, the post from which he resigned to accept the Universal Cooler appointment.

Mr. Dennison entered the refrigeration industry in its early days, when he organized Dayton Refrigeration Corp. and served as its vice president and sales manager.

PIONEER



Arnold H. Goss Ends His Life

Founder of Kelvinator; Partner Of Durant In Organizing General Motors Corp.

DETROIT—Arnold H. Goss, 63, outstanding big business executive of the pioneering period in the development of electric refrigeration, ended his life with a razor last Friday, Oct. 21, on his 600-acre estate, the Oaklands, 35 miles west of Detroit.

Mr. Goss suffered from a heart ailment and had been under doctor's care. His despondency was attributed to his long illness. The body was not discovered until about four hours after his death. The funeral was held at the family residence, Skylodge, Monday afternoon.

Mr. Goss was born in Laingsburg, Mich., July 2, 1875. His father was a Methodist minister. He leaves a wife, Gertrude E. Goss; a daughter, Dorothy A. Goss; two sons, Donald J. and Warren K. Goss. The latter

(Continued on Page 2, Column 1)

O'Harra, Zimmerman Advanced By Norge

DETROIT—Advancement of M. G. O'Harra from the post of eastern sales manager to that of vice president in charge of sales, and of P. B. Zimmerman from vice president in charge of sales to vice president and assistant to the president, has been announced by Howard E. Blood,

(Concluded on Page 12, Column 5)

Refrigeration Is In Spotlight At Dairy Exposition

Frosted Foods Cabinets Get Major Share Of Attention

By Phil B. Redeker

CLEVELAND—Refrigeration equipment — particularly refrigeration equipment for the retailer — was making more news and getting more attention at the Eleventh Dairy Industries Exposition held in the Public Auditorium here last week than it has at any Dairy Exposition for 10 years.

New types and improved construction designs in ice cream cabinets were generating more enthusiasm for ice cream cabinets than has been noted in years; low-temperature cabinets for frozen foods were getting close attention from the ice cream manufacturers, whom rumor says are on the verge of "moving in" on the frozen foods field, and new types of milk and beverage dispensers, some coin-operated, were packing crowds in the booths where they were displayed.

Self-contained units seem to be strictly the order of the day, and it was noteworthy that many exhibitors were making quite a bit out of the fact that they were changing equipment or so building it that it could be serviced with the least difficulty—a tribute to the growing importance of the independent refrigeration service man.

While perhaps the majority of the retail equipment shown is aimed at a replacement market, much of it is designed for the new-found applications.

Hermetic units with a five-year guarantee are being used in all of the 1939 line of self-contained ice cream cabinets manufactured by Harold L. Schaefer, Inc.

This announcement, marking an innovation among ice cream cabinet manufacturers, was one of the most important pieces of news to come out of the Dairy Industries Exposition.

Another piece of news was the introduction by Schaefer of a new "two-temperature" ice cream dispensing cabinet, with four 2½-gal.

(Continued on Page 3, Column 1)

Chicago Groups Plan Cooling Symposium

CHICAGO — Men prominent in various phases of the air-conditioning industry will be speakers at a symposium on "Air Conditioning for Human Occupancy," to be held starting at 7:30 p.m., Nov. 22 in the auditorium of the Engineering building here.

Sponsoring the meeting are the Chicago chapter of the American Institute of Architects, the Illinois Society of Architects, the Western Society of Engineers, the Illinois chapter of American Society of Heating & Ventilating Engineers, the Chicago Association of Consulting Engineers, the Refrigerating Machinery Association, and the Air Conditioning Manufacturers Association.

John Howatt, past president of American Society of Heating & Ventilating Engineers and chief

(Concluded on Page 8, Column 4)

Refrigerator Taxes Show Sharp Drop In Sept.

WASHINGTON, D. C.—Excise tax collections on mechanical refrigerators during September totaled \$404,427.27, compared with \$752,954.38 for the same month last year, according to figures released by the Bureau of Internal Revenue.



J. NELSON STUART
Kelvinator's new advertising and sales promotion manager.



W. H. DENNISON
Who has just been appointed sales manager of the household refrigeration department of Universal Cooler Corp.



M. G. O'HARRA
Promoted to Norge's vice presidency in charge of sales.

Move Into Important Posts With Three Manufacturers

Arnold H. Goss—Preacher's Son, Barefoot Boy, Idealist and Dreamer— Who Foresaw the Future of Automobiles and Refrigeration and Founded Enormous Corporations for Large-Scale Production of Modern Inventions

(Continued from Page 1, Column 4)
is a student in the Harvard School of Business Administration.

He graduated from Albion College and later studied law in the office of U. R. Loranger in Bay City, Mich. He was admitted to the bar in 1905 but never practiced law. About 1906 he became associated with William C. Durant and was an active partner in all the fabulous promotions in the automobile field which are usually credited solely to Durant. (Further references to his association with Durant will appear later.)

BOY'S INITIAL CAPITAL: ONE JERSEY COW

When he was 14 years old, Arnold Goss left home and struck out for himself. He was barefooted and his capital consisted of one Jersey cow. Throughout his long and eventful career he never lost interest in Jersey cattle. At the time of his death he was the possessor of a herd of 300 Jerseys said to be one of the largest and finest in North America. His special pride was the bull, Foremost High Flyer, which recently won the Grand Championship of the continent at the National Dairy Show in Columbus, Ohio, for the fourth consecutive year.

He became interested in electric refrigeration about 1914 and was the founder of Kelvinator Co. He had other business interests and did not take active charge until 1920. At that time the Kelvinator business was located in the old building on Fort St. where many of the later leaders of the industry got their start. It was not the first company to be organized to manufacture electric refrigerators but it is the only one of that day which has survived.

A MAN OF GREAT VISION

Mr. Goss was a man of great vision and had the ability to inspire his close associates in undertaking tremendous plans for the future. Like his early partner, William C. Durant, he was inclined to build far beyond the immediate needs because of his unlimited confidence in the future. Just as Durant was ridiculed for building the tremendous General Motors building, so was Goss criticized for designing the Kelvinator plant on such a large scale. It was said at the time, that the building was large enough to produce all the electric refrigerators which could ever be sold for 50 years to come. (An addition has since been built, not to mention the several large plants of other manufacturers.)

AHEAD OF HIS TIME

However, both Mr. Durant and Mr. Goss had the misfortune to be "ahead of their time" in that they were unable to maintain control of their enterprises until the returns in dividends were sufficient to justify

the enormous financial operations required by their building programs. Mr. Goss lost control of Kelvinator Corp. in 1927 and was forced to retire as president of the company.

ORIGINAL PLAN FOR MERGER OF AUTOMOBILE COMPANIES

It is said that the idea of organizing the General Motors Corp. was conceived by Mr. Goss and that he was responsible for buying up the various plants. According to his close friends, Goss was the man behind the scenes who did the work while Durant was the "front" who was known by the public.

Goss sold the first stock of Buick Motor Co. to the public and was secretary and treasurer of that company about 1907. Buick Motor Co. was the nucleus around which General Motors was built.

According to the story, Mr. Goss at one time had a six-month option to buy the Ford Motor Co. for \$8,000,000. He tried to raise the capital for this venture without success. Bankers told him that there was no future for the automobile business since everybody who could afford to buy an automobile already had one.

"MEN, MONEY, AND MOTORS"

In the book "Men, Money, and Motors," a dramatic story of early automobile history written by Theodore F. MacManus and Norman Beasley in 1929, no mention is made of Arnold H. Goss. That book, in turn, notes that the New York Times of Sept. 16, 1908, made no mention of the organizing of General Motors.

According to the book, the Ford negotiations took place in the Belmont hotel, New York City, and involved only Henry Ford, James Couzens, and Durant. Ford wasn't feeling well and the deal almost went through on a deferred payment basis.

CHEVROLET DEAL PROFITABLE

When Durant lost control of General Motors in 1911 he and Goss organized the Chevrolet Co. This venture was highly profitable and enabled Durant to regain control of General Motors in May, 1916. Friends of Goss claim that it was he who gathered up the stock and engineered the coup.

In 1908 and 1909, Mr. Goss was listed in the city directory (published by R. L. Polk & Co.) as secretary of Michigan Motor Casting Co., 2642-72 East Grand Blvd. Frank L. Bromley was listed as president and treasurer of the company.

The 1914 city directory lists the Goss residence at 205 Virginia Park and shows Mr. Goss as treasurer and general manager of Detroit Demountable Rim Co., 1330 Twelfth St. Chester C. Harbidge was president and William D. Mercer secretary of the company.

AUTO ACCESSORY PROFITS USED TO BUILD KELVINATOR

In 1916 the city directory listed Mr. Goss as president of Detroit Demountable Rim Co. R. E. Densmore was vice president, and William D. Mercer was secretary-treasurer. This company later became Detroit Carrier Corp. and was finally absorbed by Kelvinator. Actually, its profits furnished a good deal of the capital for developing Kelvinator.

According to the Detroit City Directory for 1916, Edmund J. Copeland was the first president of Kelvinator, Mr. Goss was vice-president (with an office at 1507 Kresge Bldg.), and William T. Utley was secretary-treasurer.

ONLY THREE ELECTRIC REFRIGERATORS ON MARKET IN 1920

In 1920 a Mr. Kizer was treasurer and E. E. Longnecker was sales manager. Mr. Goss assumed the presidency. At that time there were only three electric refrigerator manufacturers in the field, Isko, Kelvinator, and Delco Light Co.

The Guardian Refrigerator Co. had been started in Detroit in 1916. W. C. Durant bought the Guardian business as a personal investment in 1918. He changed the name to Frigidaire on Feb. 8, 1919, and sold the company to General Motors.

It was operated by the Delco Light Division under R. H. Grant until the Frigidaire Corp. was formed in 1926 and E. G. Biechler was made president and general manager. This company later became the Frigidaire Division of General Motors Corp.

SERVICE PROBLEM LICKS ISKO

The Isko Co. had been started in 1912 by Fred Wolf with the backing of Henry B. Joy and other Detroit capitalists. Large-scale quantity production was undertaken and full-page advertisements in the Saturday Evening Post were used.

The Isko expansion was too rapid and the cost of servicing units scattered over the country resulted in heavy losses.

KELVINATOR SHOWED FIRST PROFITS IN 1921

Mr. Goss had put a total of \$287,000 into the Kelvinator venture up to the time he became president in 1920. The business was in the red to the amount of \$650,000 in February, 1921, when the first monthly statement showing a profit was produced. That profit amounted to 85 cents but the company continued to show a profit every month thereafter for several years.

During the early 20's Mr. Goss made considerable money in the Texas oil fields and apparently used those profits in his refrigeration financing. He also had a chain of drug stores in Detroit, Flint, Grand Rapids, and Saginaw (The Mercer stores) operated by a brother of Wm. D. Mercer. He sold the drug stores to Liggett in 1926 to raise more money for Kelvinator.

Mr. Goss also owned the Detroit Carrier Corp. which manufactured automobile tire carriers and locks. Patents on this equipment gave him practically exclusive control of that automotive accessory and the business was very profitable. W. D. Mercer was president and general manager of this company and M. J. Morrell was treasurer. Later, the Detroit Carrier Corp. was absorbed by Kelvinator.

E. J. COPELAND STARTS A NEW COMPANY

When Copeland, Kizer, and Longnecker were eliminated from the business in 1920, U. R. Loranger became general manager and treasurer but he occupied that position less than a year. W. D. Mercer became vice president and general manager in 1921.

Ed. Copeland then started the Copeland Co. After a few years he

was forced out of that company and Wm. Robert Wilson became president.

Harry E. Thompson, who had been in charge of engineering, left Kelvinator in 1921 to join a group which organized Universal Cooler Corp. He later joined Brunner and is now president of Copeland Refrigeration Corp., Sidney, Ohio (reorganized in 1937).

DWELLEY BECOMES SALES MANAGER IN 1920

G. M. Dwelley joined the Kelvinator Co. as sales manager in March, 1920. Mr. Dwelley had been connected with the Multigraph Co. at St. Louis and planned to become a distributor for Kelvinator in that territory. Mr. Loranger hired him as sales manager.

At the time Mr. Dwelley became sales manager, Kelvinator had 42 dealers mostly east of the Mississippi River. The company had had experience with a dealership in Los Angeles which proved to be very expensive because of the cost of servicing the machines.

NO ELECTRIC WORTHY OF BOHN ICEBOX

In those days the electric refrigerator was not a complete self-contained unit but was an evaporator or "boiler" and a machine to be installed in and connected up with an existing icebox. The Bohn Refrigerator Co. of St. Paul was advertising that no electric refrigerating machine was worth putting into a Bohn icebox.

A deal was made with the Gibson Refrigerator Co., the manufacturer of iceboxes in Greenville, Mich., to cooperate by making a cabinet specially suitable for a Kelvinator installation.

In the early twenties the elder Mr. Gibson received a telegram from L. A. Roth, Kelvinator dealer in Baltimore, ordering an icebox to be shipped by express. Mr. Gibson wrote the Kelvinator Co. that the man must be crazy. It was the first time that anyone had ordered a box by telegraph and no shipment had ever been made by express.

STARTS TRADE PAPER ADVERTISING IN 1919

It was about 1919 that Kelvinator decided to expand its distribution. Previously, units had been installed only in the Detroit area on account of the service problem. F. M. Cockrell, now publisher of the NEWS, was then Cleveland manager of Electrical World and Electrical Merchandising. He called on the advertising manager of Kelvinator at the old Fort St. plant and walked out with an order for 52 full-page advertisements in Electrical World, also complete copy and layout for the first advertisement which appeared in the next week's issue. It was his first call on Kelvinator and he arrived in the nick of time because, otherwise, the contract and copy would have gone into the mail that evening.

The first Kelvinator advertisement was published in Electrical World but two or three weeks later on his return trip to Detroit, he again called on his new customer and found that the contract had been cancelled by order of Mr. Copeland. The advertising manager insisted that the action was final and that nothing could be done about it but Mr. Cockrell walked across the hall and into Mr. Copeland's office. A long conversation ensued in which Mr. Copeland explained the problems that he was up against in trying to sell electric refrigerators.

COPELAND TELLS GRIEVANCES AGAINST ELECTRICAL TRADE

Mr. Copeland had three well defined grievances against the electrical industry in general. First, he felt that the electric motor manufacturers were charging exorbitant prices and he believed that it would be neces-

sary for Kelvinator to manufacture its own motors. Second, the Square D Co. had promoted the adoption of an ordinance in Detroit which required a safety switch on each installation, thereby adding several dollars to the cost. Third, the Detroit City Council had also adopted an ordinance which required a licensed electrical contractor to install an electric refrigerator. This prevented the men specially trained in the Kelvinator plant from installing their own equipment. He had got around that obstacle by organizing an electrical contracting business for the sole purpose of installing Kelvinators.

During the conversation no mention was made of the cancelled advertising contract but the following week Mr. Cockrell received word from the Electrical World office in New York that the Kelvinator schedule had been reinstated by mail.

LAUNCHES EXPANSION PROGRAM FOR KELVINATOR

It was in 1925 that Mr. Goss embarked upon a program of expansion which led to financial difficulties and resulted in his losing control of the business. He built the big Kelvinator plant on Plymouth Road in Detroit at a cost of about \$6,000,000. He paid another \$6,000,000 for the Leonard Refrigerator Co. in Grand Rapids and a third \$6,000,000 for the Nizer Corp. Unexpected additional expenses of the consolidation added another \$6,000,000 making a total investment of approximately \$24,000,000. This consolidation of Kelvinator, Leonard, and Nizer was named the Electric Refrigeration Corp. and Mr. Goss became its first president Jan. 1, 1926.

In order to finance this program Mr. Goss called on New York bankers and stock of the Electric Refrigeration Corp. was put on the market. Starting at about \$10 a share it advanced rapidly to a peak of \$93 and then hit the toboggan to \$6 per share. On March 1, 1927, C. King Woodbridge was put in charge of the business by the New York banking interests. First he was elected vice president and general manager. In June, 1927, Woodbridge became president and general manager and Mr. Goss was made chairman of the board of directors.

During the two years, in which Woodbridge was in charge, the condition of the business became worse rather than better and it was freely predicted that it would be necessary for Kelvinator to go through bankruptcy.

PLEASED WITH MASON'S SUCCESSFUL MANAGEMENT

George W. Mason was put at the helm as president and general manager in 1929. He succeeded in restoring lost prestige, put the company on a dividend paying basis and restored Kelvinator to a position among the top ranking producers which includes such strong organizations as Frigidaire, General Electric, and Westinghouse.

Mr. Goss bore no grudge against (Concluded on Page 11, Column 1)

Checked again, again, and again!

● Ansul laboratory technicians check Ansul products again and again through the steps of production. The individual analysis tag on every Ansul cylinder is Ansul's certificate of merit—your proof of Ansul quality.

There is an Ansul Distributor near you

ANSUL CHEMICAL COMPANY
MARINETTE, WISCONSIN

ANSUL SULPHUR DIOXIDE
METHYL CHLORIDE



Anaconda Copper Refrigeration Tubes

Dependable!

THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
General Office: Waterbury, Conn.

Commercial Refrigeration

Sealed Ice Cream Unit, Frozen Foods Cases Feature Dairy Exhibits

(Concluded from Page 1, Column 5)

and four 5-gal. can compartments, and the refrigeration system so arranged that any combination of temperatures can be maintained in the two different sections.

The new sealed unit has a replaceable dome, and can be so repaired in the field, although Schaefer does not recommend that. Rather, a replacement unit consisting of the parts that comprise the sealed mechanism (including compressor and motor) is to be furnished for ready replacement in the field.

Compressor in the new sealed unit is of the reciprocating type. Certain refinements have been made in connection with its use in ice cream cabinet work.

For instance, the size of the condenser has been increased one-third. Air inlet for the condenser through the side of the self-contained cabinet is in the form of a grille, rather than louvers, and this grille is cut exactly the same size as the condenser.

A canvas "sleeve" has been fitted from the grille to the condenser, so that all the air pulled in through the opening is drawn across the condenser surface and used for condenser-cooling purposes.

Schaefer is claiming that with these improvements the running time of the condensing unit for normal work has been cut to around 30%.

The guarantee on the hermetic units is given at an extra charge of \$5 on chest models, and for \$7.50 on all standard ice cream cabinets up to and including the 12-hole sizes.

Schaefer's new two-temperature cabinet is like many another self-contained cabinet; there are four full-sized compartments at one end, and four half-sized compartments at the other end, over the compressor compartment.

However, by using two expansion valves and a two-temperature valve, it is possible to maintain different temperatures in each end of the cabinet.

This is of significance to the one-cabinet "stop" (which, translated from ice cream industry jargon, means a retailer of ice cream with but one cabinet) because he may want to sell both package ice cream and also in bulk (dipping). It is common knowledge among ice cream retailers that package ice cream keeps best at about -10° F., and that bulk ice cream for dipping is preferably kept at 7° F.

With the flexibility offered by the two-temperature system, an operator who sold more package than bulk ice cream could keep the larger section at -10° F.; or, if desirable, he could keep the entire cabinet at either the higher or the lower temperature.

In Schaefer's show booth were Harold L. Schaefer, Robert P. Norris, G. E. Berres, Lee Andrews, L. C. Wood, F. L. Toohey, Thomas Blackett, Glen Whitney, W. W. Merydith, Anne Katz, Frank Gordon, and W. H. Burchfield.

Anheuser-Busch Copeland

Among the featured equipment in the exhibit of the ice cream cabinet division of Anheuser-Busch, Inc., were Copeland condensing units, with some new refinements in construction making them especially adaptable for self-contained ice cream cabinets.

These Copeland compressors have a cast base, are so designed that the unit stands as low as possible, and are claimed to be exceptionally quiet in operation.

Anheuser-Busch had one of the largest exhibits of ice cream cabinets at the Show, featuring double-row portable chests up to the 12-hole size, a 245-gal. "Big Bertha" hardening cabinet, several soda fountains, and a frozen foods retailer's cabinet with a new feature in the form of a chrome brass rail shelf on the front of the cabinet, for display of dummy packages.

Copeland men on hand at the Anheuser-Busch exhibit included

Harry Thompson, president of Copeland Refrigeration Corp., Frank J. Gleason, vice president and sales manager, and W. G. Von Meyer.

Anheuser-Busch men in the exhibit were Gus G. Kindervater, Oliver E. Shaw, Floyd H. Marx, Rufus E. Vaughan, A. A. Beckmann, L. B. Cummings, W. M. Wright, and E. J. Schrader.

Aluminum Co.

Aluminum Co. of America showed a section of a milk handling tank, showing exterior and interior construction, tubing and pipe fittings, a steam-jacketed kettle, foil packages for butter and cheese, and a cooler unit. In the company's space were R. B. McKee, F. D. Goll, W. R. Butler, M. L. Crawford, R. M. Beck, J. W. Wareham, R. A. Anderson, M. R. Kambach, Herndon A. Oliver, Jr., and T. A. Torrence.

Armstrong Cork

Corkboard insulation, cork covering and fitting covers for cold lines, insulation sundries and finishes, and cork cover for dairy barn stalls were shown by Armstrong Cork Products Co. Representing the company at the show were S. C. Martin, L. R. Harbaugh, E. C. Lloyd, H. B. Wentz, B. W. Adams, R. B. Breneman, D. S. Miller, G. L. Ridgeway, J. C. Forney, Robert Clark, J. L. Whiteman, and E. D. Ainslie.

Bastian-Blessing Co.

"Streamlined" construction and styling and some new operating features distinguished the new frosted foods cabinets displayed at the show by the Russ cabinet division of Bastian-Blessing Co.

The cabinets have nicely beveled corners, made possible by angle steel frames and one-piece porcelain paneling. This steel framing is said also to make possible the use of "extra" insulation without increasing the overall dimensions.

One of the operating features is the use of a "magic eye" (red light on the operator's side of the cabinet) which flashes on when 6° F. temperature rise occurs, indicating some operating difficulties.

Cabinets are cooled by a direct-expansion system, coils being wrapped around the inner lining. The self-contained 12-lid cabinet uses a 1/2-hp. compressor.

The patented Russ "Trayveyor" system of sliding drawers is used as the storage bins. Cards on the drawers tell the various items stored.

On the menu board, the various foods are listed in individual changeable celluloid strips, while the prices are shown on separate tabs.

Above the listings are four related posters in full color, containing brief facts about frosted produce.

Compartments on each end of the board are provided for consumer literature. Holders for paper bags are welded to the back of the menu superstructure.

Any of the cabinets can be equipped with a rear-type superstructure for installation against a wall.

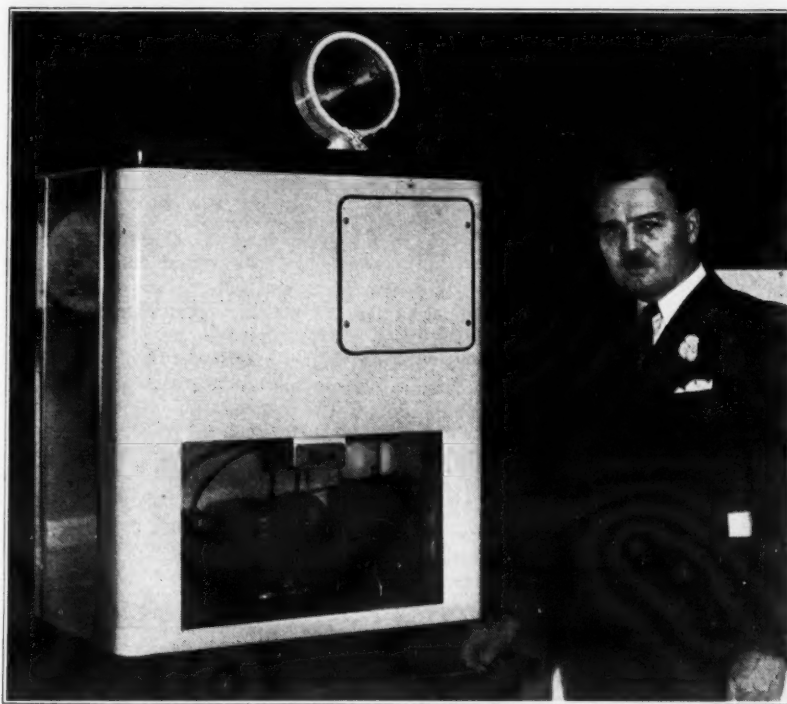
In the Bastian-Blessing booth were Charles E. Knight, Lee Koch, L. N. Lucas, Harry Pascal, J. E. Figaras, E. G. Reynolds, D. W. Holmes, W. Chickering, H. K. Johnson, and A. E. Eckert.

Bristol Co.

Bristol Co. showed a dairy recorder, air-operated temperature recorder controller, air and electrically operated milk flow thermallimit recorder controllers, differential air-operated controller, industrial mercury stem thermometers, resistance thermometer recorder, the Bristol Pyromaster, and a milk flow diversion valve.

In the company exhibit were H. E. Beane, G. H. Gaites, F. A. Faust, C. Worth, H. C. Clarke, O. J. Leone, J. G. Kirkpatrick, J. M. Manypenny, and E. Nuber.

Putting Color In Ice Cream Cabinets



Harold L. Schaefer's 1939 ice cream cabinet models, besides having a hermetically sealed refrigerating unit, also are obtainable in colors.

Century Electric Co.

Century Electric Co. had on display splash-proof motors for cow plant operation, high torque motors for refrigeration compressors, fractional horsepower motors for ice cream cabinet refrigeration, motors for general purpose applications, and electric truck refrigerating systems.

Representing the company were J. L. Woodress, G. C. Henderson, A. Neher, I. S. Adelberg, W. H. Moore, R. E. Blusch, Fred Powers, and Oliver S. Imes.

Cork Import Corp.

Cork Import Corp. displayed its Novoid corkboard insulation and cork pipe covering insulation. Representatives present included D. W. McKee, E. D. Schive, G. H. Drake, and L. M. Lynn.

Curtis

The 1939 line of condensing units for ice cream cabinet applications and other new equipment was shown by the Curtis Refrigerating Machine Co.

The Curtis condensing units shown were in 1/4, 1/2, and 3/4-hp. sizes, compact in design so that they will fit easily into self-contained cabinets.

These units have a multiple-belt drive, a safety factor for ice cream cabinet operation, as one of the two belts would keep the unit in operation.

Another new unit shown was a special truck unit, with a new truck mounting and including the unit and the Century Electric dual motor for power take-off.

Curtis also displayed its unit designed for a gasoline-engine drive. Where formerly the unit and engine were sold together, because of an

integral drive mechanism, the new unit has a ball-bearing jackshaft which makes it possible for the unit to be sold separately, and relieves the dealer of the direct responsibility for the gas engine.

In Curtis' booth were W. C. Hecker, H. C. Morrison, L. C. Blake, H. J. Nettler, W. M. Clow, W. W. Hull, J. E. Manahan, E. Gyax, E. A. Walsh, R. Kempf, and A. R. Tarlton.

Dole Refrigerating Co.

Dole Refrigerating Co. put emphasis on its display of the improved Doleco plate-type evaporators and Doleco plate units for ice cream hardening rooms, trucks, etc.

The plate units are said to be more compact and easier to install than ever before, and to provide even cabinet temperatures and no unrefrigerated spaces.

Also shown were a six-hole soda fountain, conversion unit only; flexible hoses and fittings, a belt-connected soft drink dispenser, and ice cream cabinet sub-tops.

Representing Dole at the show were E. J. Tweed, H. W. Kleist, H. C. Clay, C. C. Ryan, L. A. DeMore, O. J. Armstrong, Cecil Boling, Henry Dolan, T. H. Metzler, H. S. McCloud, A. Chadburn, and C. H. Boyd.

Frick Co.

Frick Co. exhibited at the show a 5 x 5 ammonia compressor cut-away for inspection, and turned over slowly by a geared motor, a 7 3/4 x 5 ammonia booster compressor with cover plates removed and turned over slowly by a geared motor, the patented Frick "Flexo-Seal" for compressor shafts, control valves, Frick-Knickerbocker refrigerated food lock-

ers, and an illuminated background panel showing the major uses of its refrigerating equipment in food service, air conditioning, ice making, and process work.

In the company's booth were P. H. Buch, W. A. Aubrey, C. C. Smith, L. H. Maxwell, G. E. Elden, J. A. Mikesell, P. A. Willis, and W. J. Dugas.

Frigidaire

Frigidaire displayed its 1938 line of ice cream cabinets, as the 1939 line will not be ready before the beginning of the year.

Spotlighted in the display, giving the effect of a fountain banked by flowers, was the "lift-out liner" feature of the Frigidaire cabinets.

In the display, the liner was continuously raised out and set back perfectly in the cabinet, the point being that the cabinets are now so constructed that it is only necessary to break an asphalt seal to lift out the liner (to which the coil surface is attached) in case a service need demanded it.

Under previous methods, there was a better-than-even chance that the insulation would be damaged if such a move were necessary.

Also in the exhibit were working displays showing some of the precision methods used in Frigidaire production.

In Frigidaire's booth were H. A. Beck, P. H. Burger, M. D. Weisenbarger, L. E. Smith, J. L. Gibson, W. H. Teeter, T. W. Markham, R. E. Smithson, C. E. Quigley, W. F. Layer, E. E. Rouech, R. N. Merritt, and others.

Glascok Bros.

Attracting considerable attention at the show was the "Nick-L-Milk" vendor cabinet, made by Glascok Bros. Mfg. Co., by which quart and pint bottles of milk can be vended for a dime and a nickel from a refrigerated cabinet.

This cabinet is intended primarily for use in factories, offices, and schools, so that individuals may provide a cold bottle of milk for a luncheon or a recess period.

Each bottle of milk is under a 3/4-inch square glass door, which doors are arranged on the top of the cabinet. A sliding metal bar is the "selector" by which the customer can get the kind of milk or beverage he desires, and, by inserting a coin in a typical slot, the door is opened.

Bottom part of the cabinet is occupied by the compressor and a series of racks for the empty bottles.

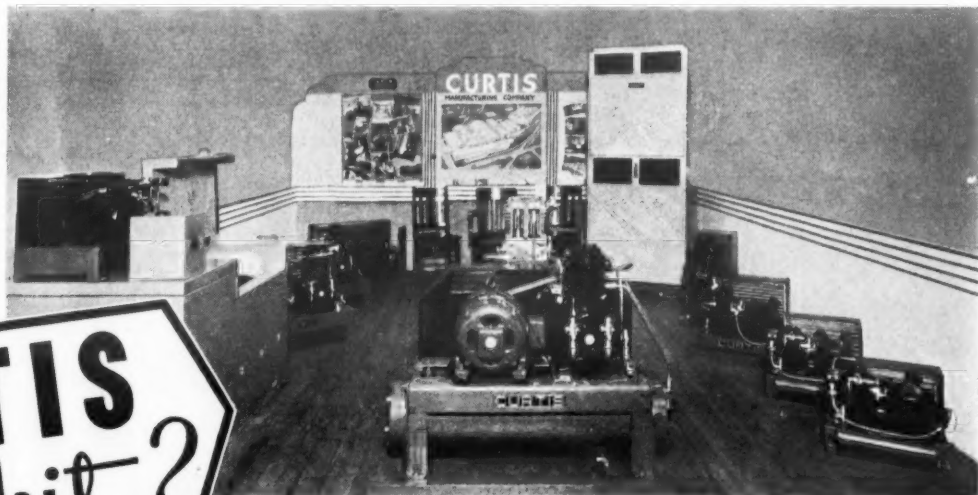
A dry-type cooling system is used. Cabinet is finished in white enamel. Top is of moulded bakelite with brass chrome-plated fittings. The Nick-L-Milk is made in two sizes, six different combinations.

Also shown by Glascok was the new "Glasco" display cabinet for dairy products, having 10-cu. ft. capacity and measuring 33 1/2 inches x 25 1/2 inches x 50 inches high.

It is a self-contained model, and the front half of the upper section

(Concluded on Page 4, Column 1)

Did You See
this
CURTIS
Exhibit?



● The Curtis booth at last week's Dairy Industries Exposition in Cleveland displayed a comprehensive exhibit of the Curtis line—showing Curtis condensing units, milk coolers, air conditioning and refrigeration equipment of various sizes and capacities. Hundreds were attracted to this display.

Displaying the Curtis line at important conventions is only one of the many ways in which Curtis creates acceptance to help the Curtis dealer make more sales and profits. Others include consistent publication adver-

tising to your prospects monthly; plus a complete line of sales helps, direct mail, posters, sales manuals, engineering data, dealer signs and the like. The whole Curtis sales, advertising and merchandising plan is designed to build greater sales for Curtis products, through the dealer—the result of 84 years of successful merchandising and selling methods.

Curtis backs the Curtis dealer all the way. Write for full information.

CURTIS REFRIGERATING MACHINE CO.

1912 Kienlen Avenue, St. Louis, U. S. A.

"Builders of Condensing Units Since 1922"

New Commercial Refrigeration Equipment Is Introduced At Dairy Show In Cleveland

(Concluded from Page 3, Column 5)
has a triple-plate glass display compartment with a novel shelf arrangement.

Glascok was represented at the exposition by C. A. Frick, R. E. Baker, J. E. Johnson, J. E. Frick, Walter L. Cunningham, and C. O. Barnes.

Grand Rapids Cabinet

Service men should be pleased with the trend which Grand Rapids Cabinet Co. is inaugurating with its "pull-out" compressor in self-contained cabinets.

The condensing unit is mounted in a slide base by means of which, after the proper disconnecting has been done, it slides out of the case, thus making it perfectly in the clear for the service man to operate on.

The slide-out unit is one of the prime points of the new "compact" cabinets which Grand Rapids Cabinet exhibited for the first time.

Also shown were a line of no-glass display frosted foods display cases, features of which were a double-faced display rack (with prices and displays on both sides) and wire lift-out baskets in the storage compartment.

Representing Grand Rapids Cabinet at the show were E. M. Fritz, W. L. Molloy, W. H. Knowles, E. W. Schroeder, E. J. C. Fisher, C. A. Fowler, R. M. Lambeth, A. E. Buck, C. W. Clifford, M. R. Miller, George Wood, and O. H. Miller.

Henry Valve Co.

Henry Valve showed a display board of Henry driers, strainers, dairy and ice cream valve sets with ammonia flexible lines. In the company's booth were C. V. Gary, C. J. Henry, and H. A. Henry.

Kalva Venders, Inc.

Kalva Venders, Inc. displayed a self-contained refrigerated bottle vending machine, which can be used for bottled milk or other beverages.

The machine is motor driven, and brings the bottle out of a slot when the coin is inserted and a lever operated.

The machine is a little higher in construction than the ordinary beverage cooler.

Kalva Venders was represented at the show by John A. Cory and Fred H. Knowles.

Kelvinator

Kelvinator did not show any 1939 models, but nevertheless had one of the largest exhibit spaces at the show to demonstrate its present line of ice cream cabinets and a refrigerated truck condensing unit.

One of the ice cream cabinets has been converted into a cabinet for use by frosted foods retailers, and has a panel menu board and other typical frosted foods cabinet features.

In Kelvinator's exhibit were Edward R. Legg, D. H. Carter, A. W. Christensen, D. J. Bowen, A. P. Hawkins, H. B. Johnson, E. R. Kelley, A. J. Lutz, R. N. Palm, H. J. Priest,

R. J. Scheu, P. B. Toohey, and J. W. Topping.

Kold-Hold

Kold-Hold displayed an improved plate-type conversion unit for ice cream cabinets and its well known line of plates for truck refrigeration use.

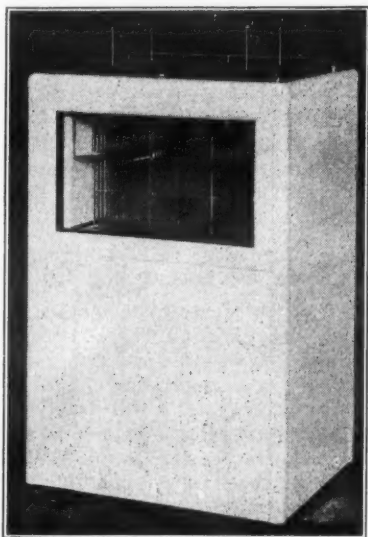
These conversion units this year are enclosed, thus being complete in one piece and ready to slip in a cabinet.

Evaporators are fin-less, the plates being so made to hold the proper amount of solution. Plates are all-steel construction, tubing is silver soldered.

A new time-saving device on these units is a boiler hole in the front, the plate to which is easily detached, the expansion valve being mounted on the plate.

The Kold-Hold heat exchanger-accumulator is standard on all units. It is claimed that this permits 100% use of the evaporator without frost-

Dairy Case



A self-contained display case for dairy products was included in the Glascock display.

back, prevents possible damage to compressor from slugging, and allows the gas to return to the compressor with very little increase in superheat. In the conversion units this heat exchange accumulator is installed right back of the boiler plate.

Kold-Hold representatives at the show included J. R. Tranter, O. S. McGuffey, O. D. Greenlee, H. J. Burman, R. H. Glezen, Louis Block, H. O. Reams, Lorimer Dunlevy, and Baer Soffe.

Mitchell & Smith

Mitchell & Smith, Inc. exhibited its line of corkboard insulation, regranulated cork, pipe covering, cork gaskets, and cork rolls. Representing the company were Charles L. Parham, F. Robins Mitchell, R. P. Champney, R. B. West, Larry G. Stoops, Elvin G. Krebs, W. M. Jackson, and C. S. Ross.

J. Moss Equipment

Shown in the exhibit of J. Moss Equipment Co., Inc. were four and eight-hole "Evacold" ice cream cabinets, with self-contained compressors; a two-hole double "Evacold" ice cream chest with self-contained

compressor; six and eight-hole double remote ice cream cabinets, and miscellaneous ice cream cabinet replacement parts.

In the company's booth were J. S. Moss, V. J. Moss, J. J. Moss, J. D. Kelter, C. P. McGuinness, J. S. Wilkerson, G. D. Ehemann, and S. Sandler.

C. Nelson Mfg. Co.

C. Nelson Mfg. Co. displayed Nelson chest cabinets, a cut-away standard cabinet, standard and combination cabinets, fountainette cabinets, a "Hi-Temperature" fountain, a hardening cabinet, refrigeration units, and a refrigeration parts board.

Representing the company were J. L. Nelson, C. W. Nelson, G. J. Doyle, T. P. Hogan, H. F. Beumer, A. R. Johnson, J. C. Toebe, J. F. Gallagher, G. I. Boone, W. P. Thomas, M. L. Price, D. J. Dowling, and others.

Pacific Lumber Co.

Pacific Lumber Co. of Illinois showed in its display a small model showing the construction applicable to Palco Wool insulation, a large bale of Palco Wool, and samples and literature illustrating and describing its products. Representing the company were John H. Klass, Marvin L. Fergestad, and Nelson P. Waite.

Robbins & Burke

Robbins & Burke, Inc. showed a 450-gallon mechanical refrigerator truck body, and sets of ammonia and methyl chloride connections. Ammonia scale traps, expansion valves, heat exchangers, hold-over plates, and a hardening and storage ice cream portable room also were on display in the company booth.

Representatives present were J. J. Robbins, J. E. Burke, and F. B. Lord.

Savage Arms Corp.

Savage Arms Corp. displayed its 1939 "Thrifty" line of ice cream cabinets, including double non-portable cabinets up to the 12-hole size.

A number of construction features are claimed for these cabinets, including an unusual steel-frame car structure, with specially stamped members, plate-type cooling surface, with the plates so constructed as to provide room for a eutectic jelly which provides a hold-over of refrigerating effect.

Another feature is a built-in thermally controllable "Tell Tale" light. In case of a refrigeration failure, this light flashes on automatically.

Side panels are removable, making for easy refurnishing and servicing. Service valves are also so located and arranged as to provide for easy servicing.

Representing Savage Arms at the show were C. A. Baldwin, R. A. Boutilier, F. F. Hickey, T. E. Hoyer, H. L. Mumford, F. SeBastian, W. Vogel, and D. D. Wile.

Charles Q. Sherman Corp.

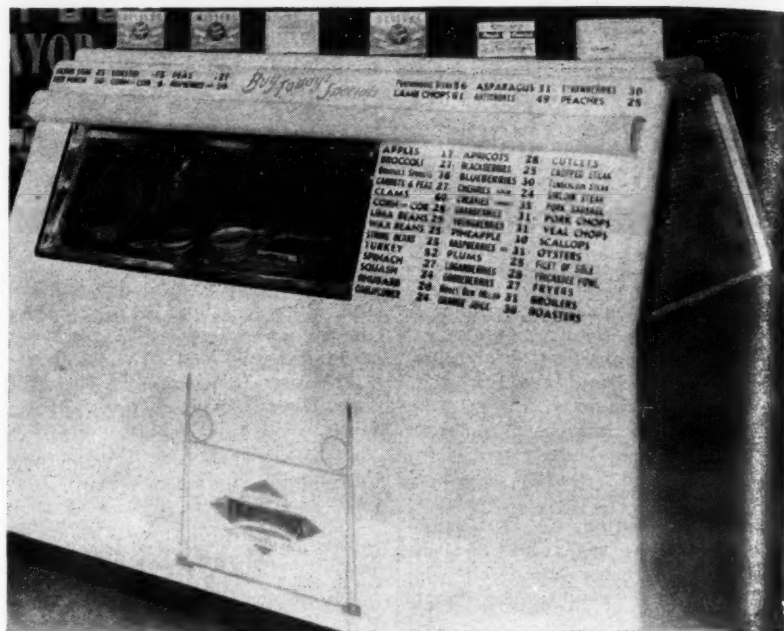
The "Frostfood Displayor" made by the Charles Q. Sherman Corp. was the only frozen foods case with a glass display section for the actual product which your correspondent saw at the show, and it was getting a lot of attention. Charles Q. Sherman was in charge of the exhibit.

There are many unusual features to the case besides the glass display section.

To begin with, it is one of the few, if not the only, top-mounted self-contained display cases in existence. The display section in the top takes up something less than two thirds of the slanted top section, the rest of the space being occupied by the condensing unit.

On the front of the condensing unit compartment are placed the slide-in strips, which give the frosted foods menu and prices. More of these strips are placed over the lighting reflector (this space being designed to advertise "today's specials," etc.).

Frosted Foods Case Has Display Window



Charles Q. Sherman Corp. exhibited this "Frostfood Displayor," which has a glass display section for the product, at the Dairy Show in Cleveland.

Because of the top location of the condensing unit, the entire bottom of the case is available for an "indexed" storage of frozen food stuffs.

It is called an "indexed" storage compartment because it consists of four levels of trays which slide horizontally on rollers. An index card, attached to the back of the case, describes the products which are kept on each level. This makes it possible for the operator to tell at a glance just what the stock condition is on each item.

Glass in display compartment is dehydrated by the patented Ottenheimer method, and the exterior lighting method is also the Ottenheimer design.

Standard Products

The "Stanzero" line of ice cream cabinets and the "Stanzero" evaporator assembly were shown by Stangard Products.

The evaporator assembly is now in a single piece, and has been refined in design to give more cooling surface in the embossed plates through which the refrigerant is carried.

A fittings plate is easily disconnected by loosening a couple of flare nuts. Expansion of the refrigerant is from the top of the plates, and is done in series.

Representing Stangard at the show were William Raskin, Max Raskin, Harry Raskin, Ruben Raskin, Sydney Parker, Sidney Randall, Simon Amler, Carl D. Fricke, L. O. Henderson, and Fred Schlauch.

C. J. Tagliabue

Shown in the C. J. Tagliabue Mfg. Co. booth at the exposition were Tag instruments including a standard milk recording thermometer, a recording thermometer for cream, a double-system indicating controller, a dial-indicating thermometer, pressure controllers of various types, thermostatic steam traps, diaphragm valves, inspector's and laboratory test thermometers, and dairy hydrometers.

Representing the company were A. F. Rucks, E. D. Wacker, W. C. Bennett, E. E. Corbett, R. M. Wilhelm, A. R. Anderson, F. L. Frock, H. W. Kerr, W. W. White, C. L. Huffman, and R. C. Staub.

Taylor Instrument Cos.

Taylor Instrument Companies exhibited instruments for indicating, recording, and controlling temperatures in dairies and ice cream plants; volumetric pressure gauges, dial and recording types, for measurement of homogenizing and viscolizing processes; dial thermometers for can washers, test thermometers for inspectors and general use, control units for all types of pasteurizers, indicating controllers, and milk flow diversion valves.

Representing the company at the show were F. K. Taylor, L. B. Swift, R. E. Olsen, J. S. Detwiler, C. E. Carson, H. W. Maurer, George W. Hill, H. Pagenstecher, H. A. Hohes, R. E. Flikkema, and Hart Taylor.

Vilter Mfg. Co.

Vilter Mfg. Co. displayed models of its 1/2 and 5-ton PakIcers, a 4 1/2 x 4 1/2 ammonia condensing unit, and a 1-hp. Freon condensing unit. In the company's booth were H. D. Andrews, H. H. McKinnies, F. D. Kirk, W. B. Vilter, C. P. Wood, J. A. Heinzelman, G. Nutting, J. E. Douglas, S. Husty, and J. Colascant.

Westinghouse

Westinghouse spotlighted a brand new "self-service" dry-expansion type bottle milk cooler.

The cabinet which Westinghouse is promoting to dealers as a "milk merchandiser" is of the self-contained type, employing a 1/2-hp. hermetically-sealed condensing unit with a five-year guarantee.

Exterior of the cabinet is finished in porcelain enamel, making it possible for the user to paint promotion or descriptive matter on the front panels.

Top is of stainless steel, with lids which slide from either end.

Refrigerating effect is furnished by "wrap-around" coils (that is, the coils are wrapped around the liner of the storage compartment). There are no coils inside the chilling tank. Insulation is 2 inches of Celotex in the sides, and 2 1/2 inches of Celotex in the bottom of the tank.

Temperature records showed the cabinet to be holding under 40° F. with the lids opened much of the time.

Capacity of the cooler is four cases of quart bottles of milk.

Also shown were 1939 Westinghouse commercial compressors for ice cream cabinet applications.

Principal refinements are the use of a vertical liquid receiver, and a general reduction in dimensions, the width of the 1/2-hp. model, for example, having been reduced 3 inches.

Representing Westinghouse were T. J. Newcomb, B. C. Davison, C. K. Carter, W. E. Slabaugh, S. A. Voelker, A. C. Eversole, and R. C. Shaw.

York

York Ice Machinery Corp. had in its display a model HL plate heat-exchanger arranged for high-temperature short-time pasteurization with stainless steel holder, control panel board, and hot water set, with a capacity of 6,000 lbs. per hour. Two other heat exchangers, with capacities of 12,000 and 25,000 lbs. per hour, also were shown.

The company also showed a model HS plate cooler, arranged with 300-gallon homogenizer and a 600-gallon vertical cooling tank, complete with cooling system and mix distributor, a 3,000-gallon horizontal insulated storage tank, a 40-quart ammonia ice cream freezer, and a 7 1/2 x 7 1/2 ammonia compressor.

Representing the company at the exhibit were W. S. Shipley, S. E. Lauer, J. L. Rosenmiller, W. H. Breen, W. W. Cavanaugh, John Schurman, H. S. Yoder, C. P. Foley, Scott Forgy, J. C. McDonald, Boyce Walker, and J. L. Brazee.

The **PREFERRED** Refrigerant for service work



MACHINE MAKERS like ARTIC because its favorable combination of properties permits building compact, light-weight units that operate efficiently and economically.

Service Men like ARTIC because its high purity, wide distribution and ease of handling contribute to convenient, dependable work in recharging Methyl units.



E. I. du Pont de Nemours & Co., Inc.
THE R & H CHEMICALS DEPT.,
Wilmington, Del.

Anaconda Copper Refrigeration Tubes

for difficult jobs!



THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
General Offices: Watertown, Conn.

SERVEL

COMMERCIAL REFRIGERATION and AIR CONDITIONING

Are your requirements large or small, standard or special? Servel can help you! Write today to Servel, Inc., Electric Refrigeration Division, Evansville, Ind.

Brunner Names Three To District Sales Positions

(Continued from Page 1, Column 1)

He also designed and installed what is claimed to be the first successful celery pre-cooling plant in the country, as well as the first successful fern pre-cooling plant. In addition, he supervised installation of several pre-cooling plants throughout Florida.

Nine years ago he designed and erected some quick-freezing plants, incorporating some of his own patents, at Sebastian, Fla. Two years later he became manager of the New York factory of Larkin Refrigerating Corp., Atlanta, where he did considerable research on low-side equipment. In 1937 he transferred to the Lester U. Larkin Co., Baltimore, and devoted his efforts to the engineering of commercial coils, forced draft units, and flash pans. He left this organization to join Brunner.

Mr. Noone will represent Brunner in the southeastern territory, comprised of South Carolina, Georgia, and Florida, with headquarters at Decatur, Ga.

Mr. Noone began his lifelong refrigeration career with Brunswick Refrigerating Co., where he gradually advanced from drafting to layout and design of complete systems, estimating, specification writing, and finally selling.

After leaving this company, he devoted his efforts to the sale of a specialized line of raw water equipment for ice manufacturing plants. Later, he established headquarters at Baltimore and specialized in applied refrigeration with Frick equipment.

Appointed to cover the Cincinnati area, which includes Kentucky, western West Virginia, and southern parts of Ohio, Indiana, and Illinois, Mr. McLeod has a longtime background in compressor application work.

For several years prior to his affiliation with Brunner, he was connected with Worthington Pump & Machinery Corp., devoting his time to engineering problems and field sales. Prior to that, he served in a somewhat similar capacity with General Electric Co.

New Financing Contracts Signed By EH&FA

WASHINGTON, D. C.—New contracts with the cities of Knoxville, Tenn., Albertville, Ala., and Eugene, Ore., which own and operate their respective local municipal utilities, have been closed by Electric Home & Farm Authority for the latter's services.

Contracts also have been closed by the EH & FA with Sumter Electric Cooperative Association, Inc., Bushnell, Fla., Barron County Electric Cooperative, Barron, Wis., and the Clay Electric Cooperative Association, Inc., Keystone Heights, Fla.

The contracts between the EH & FA and Knoxville, Albertville, Eugene, and the Sumter association provide for mutual cooperation in financing sales of electrical appliances to consumers on the utilities' power circuits.

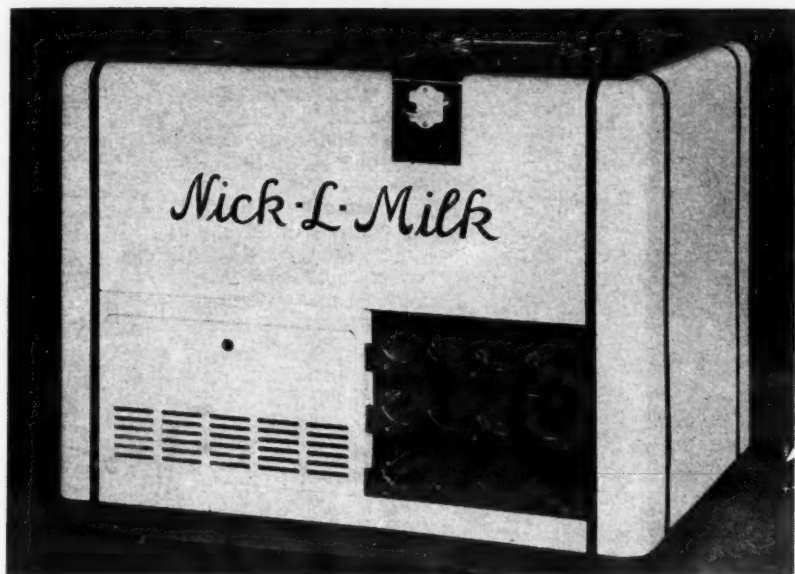
The Barron County and Clay associations already are cooperating with the EH & FA in the financing of electrical appliances, and the new contracts provide that the EH & FA will cooperate with them in financing wiring or rewiring of homes and farms at present located on the utilities' power lines.

Samson Advertising Agency Moves To New Offices

BALTIMORE—Samson Advertising & Merchandising Service has moved from the Hearst Tower building to new quarters occupying the first and second floors of the Samson building here, Samson Feldman, agency manager, has announced.

For Information on Motors FOR ALL TYPES OF Air Conditioning and Refrigeration Equipment WRITE TO
Wagner Electric Corporation
 1441 KENNESAW AVE.
 ST. LOUIS, MO.

Milk Vending Machine



A machine which vends pint and quart bottles of milk for a nickel or a dime from a refrigerated cabinet was introduced to the dairy industry at the exhibition in Cleveland by Glascock Bros. Mfg. Co.

DAIRY SHOW NOTES

BY PHIL B. REDEKER

G. L. Brunner, president of the Brunner Mfg. Co., was on hand for the show, greeting many old friends, and talking with users and prospective users of Brunner compressors.

With him was a man well-known throughout the industry, whose connection with the Brunner company will probably be announced in the very near future.

Dan Wile, Savage Arms Corp., and well known in industry engineering circles, was proudly announcing the arrival of a second girl in his family. Looks like he's going to emulate Eddie Cantor in the matter of a family. Dan also is working on some "babies" in his refrigeration equipment laboratory at Savage Arms.

H. C. Morrison, sales manager for Curtis Refrigerating Machine Co., is promising an announcement soon that will be a real piece of news. It will have to do with the broadening of Curtis activities in the refrigeration and air-conditioning field.

H. E. Clay of the Dole company was experimenting with cough medicines, trying to get rid of a cough he had contracted from a peculiar chain of circumstances.

An ardent golfer, Mr. Clay was out at a course recently, and, upon completing a 250-yard drive, felt something snap in his back. He couldn't stand, walk, or sit without great discomfort, so they put him through a series of Turkish baths in the clubhouse. However, he didn't "dry off" sufficiently before going out, and consequently got the cold which left him with a cough.

"Lucky Joe" Krall was detected snooping about the booths, trying to determine whether Detroit Lubricator valves were being used, and heckling exhibitors when they weren't.

Joe also was making good use of the infamous "match game" in keeping his expenses down. The game must be "fixed," because Joe never seems to lose except when he's playing with a customer.

Harry Thompson, president of Copeland, was prominent around the Anheuser-Busch exhibit. Harry complained that the many levels of the convention space were taxing his old

legs, but long-time friends know that he seems to grow younger year-by-year.

R. E. Ottenheimer, Ottenheimer Bros., Inc., was recalling the struggles of the frozen foods industry seven or eight years ago. He said that he had been going through a file of the issues of REFRIGERATED FOOD NEWS, published by Business News Publishing Co. at that time, and notes that they give the one complete picture of the beginnings of the industry.

William Aubrey, Frick Co. generalissimo, elaborated on his letter of praise for the Sept. 7 issue of the NEWS.

"I was just about to pull all strings to get hold of the Berle report, when I opened up the Sept. 7 issue, and there it was. That's a real service by an industry publication."

O. D. Greenlee and Lou Block of Kold-Hold Mfg. Co. are rubbing their hands over the growing popularity of frozen foods and locker storages, both of which offer markets for Kold-Hold equipment.

There isn't any phase of refrigeration in either of these two fields which the plates can't handle, they claim. Of course, they know that other types of evaporators will work in many of the phases, but they're prepared to do battle.

Both Kelvinator and Frigidaire are getting cagey. Instead of bringing out their 1939 lines for the Show, they apparently have waited to see what other cabinet makers are going to do, and then match them or try to beat them.

Roy Smithson and H. A. Beck were doing a lot of scouting for Frigidaire.

Harold Schaefer took the plunge and went in for something besides the conventional black or white in his cabinets. In fact, you can get them from Harold in Croyden yellow, Chinese red, and Nile green, or in combinations of these colors. And they look pretty snappy.

Universal Cooler was represented by Tom Pendergast, Lee Baker, and Perry Hall. All of them looked busy—and pleased.

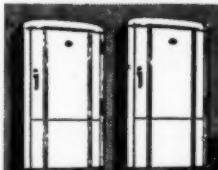
TWO PROFIT OPPORTUNITIES

Copeland

Household Refrigeration

Copeland

Commercial Refrigeration



Both products of 20 years experience. Both recognized by experts as the "last word" in modern refrigeration—efficient, thrifty, long-lasting. Write today for facts about either or BOTH of these Copeland Profit Opportunities.



COPELAND REFRIGERATION CORPORATION
 Sidney, Ohio

Extensive Advertising Features Pittsburgh Job Campaign

PITTSBURGH—Extensive newspaper and radio advertising, stressing the idea that electrical devices in the home will save more than they cost, featured the "Electrical Sales Mean Jobs Campaign" concluded here Oct. 8 under sponsorship of the Electric League of Pittsburgh, with the cooperation of the Pittsburgh Sun-Telegraph.

Full-page announcement of the campaign appeared in the Sun-Telegraph of Sept. 11, with frequent full-page promotions appearing periodically during the drive.

The newspaper cooperated in the campaign because, after careful thought, it decided that electrical appliances offer the best opportunity for cracking the buying paralysis that has crept over the public. News items, editorial comment, human interest stories, and product and use information were part of the newspaper promotion effort.

In addition to the Sun-Telegraph promotion, radio station WCAE carried campaign messages daily, and 130 motion picture theaters ran trailers stressing the campaign's dual themes: "Electrical Sales Mean Jobs" and "Buy Now While Prices Are Low."

The league furnished dealers with window cards, streamers, and buttons to aid in the campaign. Duquesne Light Co. assisted the promotion through the use of bill enclosures, billboards, and street car signs.

Howland, Commonwealth Sales Chief, Dies

CHICAGO—Gardner S. Howland, manager of the merchandise sales department of Commonwealth Edison Co., died Sept. 30 from a streptococcus infection, after an illness of several months. He was 42 years old.

Well known in the electrical industry, Mr. Howland spent practically his entire business career with Commonwealth Edison, starting in the contract department in 1914 and later transferring to the stores department. In 1919 he was named manager of one of the company's neighborhood electric shops. He became manager of electric shops in 1926, and manager of merchandise sales in 1935.

Warren Leases New Space For Commercial Sales

NEW YORK CITY—Warren Commercial Refrigerator Sales Corp. has leased a floor at 245 West 55th St. for its refrigeration business.

World's Largest Milk Plant and Distributing Depot

uses **ERICK** Refrigeration

Sheffield Farms' new \$2,500,000 plant in New York City, mightiest of its kind, uses four big Erick refrigerating machines to cool 24,000 to 32,000 quarts of milk per hour, after being pasteurized, in addition to making 160 tons of ice daily and keeping six large ice boxes cold.

Including former purchases, Sheffield now has 36 Erick compressors. Prominent firms throughout the country have each bought from 10 to 575 Erick machines. It will pay you to investigate the earning capacity of Erick equipment—whether for air conditioning, making ice, or other cooling services. Machines in sizes from 1/4 horsepower to 400 horsepower. Write

ERICK CO.
 1002 E. 12TH ST.
 PITTSBURGH, PENNA.

Frigidaire To Put 1939 Line Into Production

DAYTON, Ohio—With the announcement by Alfred P. Sloan, Jr., chairman of General Motors Corp. that 35,000 persons were being taken back to work, production of 1939 models will be started by Frigidaire division within the next two or three weeks, according to local officials.

Although refrigerators made at this time of the year are stored for inventory purposes, Frigidaire division expects to recall several hundred workmen during the next few weeks. Employees will be notified individually as rapidly as manufacturing schedules permit.

Restoration is planned of the salary level of those under \$300 a month existing prior to the reduction in February. In Dayton, this decision will affect approximately 2,200 local employees who have been retained on a salary basis.

Employees of the Inland Mfg. division, who make rubber parts used in refrigerators, are also affected by the Sloan announcement.

G-E Merges Washington, Baltimore Branches

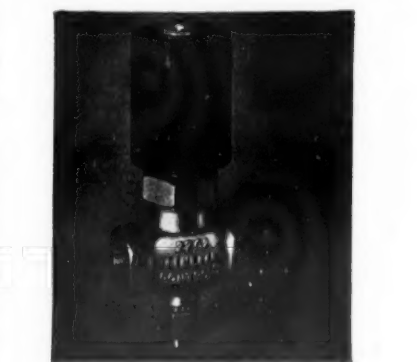
WASHINGTON, D. C.—In a move to effect closer relationship and more efficient operation in the Washington-Baltimore trade area, General Electric Supply Corp. has merged its Baltimore and Washington branches, corporation officials have announced.

The consolidation will make possible the purchasing of electric supplies in carload lots, delivery of such purchases being made in both cities, and will enable the branches to otherwise operate on a more economical and satisfactory basis.

No reductions in personnel or changes in management will result from the merger, officials say.

Charles Chowins, Kormeyer Sales Engineer, Dies

LINCOLN, Neb.—Charles M. Chowins, 49, sales engineer and purchasing agent for the Kormeyer Co., distributor and dealer for electric refrigerators and other electrical appliances during the past 25 years, died at his home here Oct. 10. He is survived by his widow and two children.



For Positive Refrigeration Control

Type K-15
 Pilot Operated Valve

Fully ported
 Minimum pressure drop
 Tight shut-off
 Quiet operation

For handling Freon, Sulphur Dioxide, Methyl Chloride, Ammonia, Steam, Water, Air, Gas, Light Oil, etc.

Ask for Catalog

GENERAL CONTROLS

Chicago, Ill. 450 E. Ohio St.
 New York City 867 5th Ave.
 Glendale, Calif. 700 W. Ivy St.
 Other offices in Cleveland, Detroit, Houston and San Francisco.

AIR CONDITIONING & REFRIGERATION NEWS

Trade Mark registered U. S. Patent Office;
Established 1926 and registered as
Electric Refrigeration News

Published Every Wednesday by
BUSINESS NEWS PUBLISHING CO.
5229 Cass Ave., Detroit, Mich.
Telephone Columbia 4242

Subscription Rates

U. S. and Possessions, Canada, and all
countries in the Pan-American Postal
Union: \$4.00 per year; 2 years for \$7.00.
All other foreign countries: \$6.00 per year.
Single copy price, 20 cents. Ten or more
copies, 15 cents each; 50 or more copies,
10 cents each. Send remittance with order.

F. M. COCKRELL, Publisher

GEORGE F. TAUBENECK, Editor
PHIL B. REDEKER, Managing Editor
THEODORE T. QUINN, Assistant Editor
ALFRED JONES, JAMES McCALLUM, and
HENRY KNOWLTON, Jr., Staff Reporters

R. T. CARRITHERS, Advertising Mgr.
HELEN K. GILMORE, Asst. Adv. Mgr.
JAMES B. SMITH, Asst. Adv. Mgr.

JOHN R. ADAMS, Business Manager
ROBERT P. NIXON, Asst. Business Mgr.
LOLA E. DEW, Subscription Manager

Member, Audit Bureau of Circulations
Member, Associated Business Papers

VOL. 25, No. 8, SERIAL NO. 501
OCTOBER 26, 1938

Copyright, 1938, Business News Pub. Co.

The Great Purge Of 1938

CONTRARY to a first-glance impression, the title of this editorial does not refer to F.D.R. and his ill-starred attempt to "liberalize the Democratic party" at the recent primaries. Rather, it refers to the highly successful and certainly commendable movement within the refrigeration industry to clean up its own stables during a year which has been the most disappointing in the industry's history.

In many other lines of business, a year which showed a drop of 50 to 60% in sales would be a year of chaos. All sorts of shady practices and deals would be introduced in a desperate scramble for the remaining business. But, after a wild first quarter, the refrigeration industry has seized the opportunity to set its house in order. And, though the profit picture for 1938 is not bright, the disorganized conditions which prevailed early in the year appear not to have caused permanent harm.

Reasons for Demoralization During First Quarter

During those first few months of 1938, however, the industry was thoroughly demoralized. Among the reasons were these:

(1) The recession. So suddenly did it come, so swiftly did it move, that nearly everybody was caught off guard. That largely accounted for the excessive

(2) Inventories which, at the beginning of the year, totaled the unprecedented amount of 650,000 household units in the hands of factories, branches, and distributors and dealers. This heavy carry-over stock was further augmented by

Repossessions Jumped To Unprecedented Figure

(3) Repossessions. Hitherto repossessions of household refrigerators had been almost negligible, usually hovering around 2 or 3%. In January and February, however, they rose to 12 and 15%. Commercial repossessions—which represent a much greater loss

than household—also rose. Repverts added to the bulging stocks, and further impressed dealers with the necessity for selling their stocks at any prices they could get in order to get cash before the general deluge.

(4) Similarity between 1937 and 1938 models also operated to make it difficult for dealers to move 1938 merchandise. Not only were the prices quoted on 1937 jobs far below those of 1938, but it was relatively easy for a salesman to point out that there was hardly any difference between the two.

Too Many Second-Rate Dealers Were Signed

(5) A glut of second-rate dealers was a factor in the debacle of early 1938. Hundreds of dealers who had no business being in refrigeration—either by reason of talents, training, capital, reliability, or even inclination—were inducted into the ranks during the enthusiastic heyday of the FHA and its no-contingent-liability acceptance of time payments. Such dealers muddled the waters frightfully, and contributed greatly to the scare-selling at bargain figures which caused the 1938 resale price structure to collapse.

(6) Wholesale men had gone to seed, according to men at each end of the distribution process—manufacturers and dealers. Largely because the heavy inventories hurt distributors most of all, their field forces were pruned, lost morale, and in general were said to have been of inadequate aid to dealers.

Definite Steps Taken To Clean Up Situation

So much for the causes of the chaotic conditions. Here are some of the things that have been done about the situation:

(1) Stocks. At present, inventories total less than 120,000 now; and experts guess that the industry will go into 1939 with less than 60,000 household units on hand—less than one tenth the figure at the beginning of 1938. Outside of skeleton stocks, commercial equipment will likely be "cleaned out."

(2) New models will be different. Practically all of the household unit manufacturers (commercial machine customers are not style conscious) are planning changes in appearance (some of them drastic) in their 1939 models. No longer will it be possible to sell a last-year's model as "the same thing" in competition with the new jobs. The difference will be plainly visible.

Better Dealers & Wholesale Salesmen Sought for 1939

(3) Better dealers (and fewer) are being sought for the 1939 campaign. Distributors are realizing that a surplus of dealers makes the sales sheet look good only during the first months; that the dumping they inevitably indulge in later in the season discourages the good dealers from strong selling efforts. Also, many of the incompetent merchants "swore off for life" in 1938.

(4) Better wholesale men are now on the road in many territories, and plans for the training of dealers' salesmen are much more concrete and better organized for the coming season.

(5) Control of price-cutting through local dealer associations, through distributor associations,

and through the increasing alertness of unorganized distributors to the dangers inherent in lax enforcement of price schedules, seems more effectively organized than ever before. Other items, such as the move by Westinghouse to eliminate "courtesy discounts," help brighten the picture.

Square Deal for Everybody Is Goal of the Industry

All in all, the refrigeration industry is trying to straighten its house around so that the right kind of people will want to live in it. The best products the manufacturers can produce, plus the best dealers they can obtain, plus the most orderly distribution system that can be devised and policed—these are the current goals.

And for people who want to remain in business over a long period of years, few other goals should be striven for so earnestly.

LETTERS

Trane Claims New York's First Cooled Apartment

The Trane Co.
La Crosse, Wis.
Oct. 20, 1938

Editor:

In the column "The Cold Canvass" signed so significantly by B. T. Umor that appears in the Oct. 5 issue of AIR CONDITIONING & REFRIGERATION NEWS, there is a paragraph that is rather hard for us to believe.

The paragraph in question reads as follows:

"An advertisement in Town and Country, September, 1938, asserts that '400 Park Ave. is the only air-conditioned apartment building in New York's central residential zone.'"

We fully realize that your interesting publication takes every precaution in publishing factual information. Therefore, when I read this little squib, I instantly recalled that sometime someone else had mentioned the only air-conditioned apartment building in the New York central residential zone. I took a few moments to investigate, and found that The Trane Co. furnished air-conditioning equipment for 25 East 83rd St., an ultra modern apartment building more in the heart of the New York central residential zone than 400 Park Ave.

In an advertisement appearing in the May 22 issue of the New York Herald Tribune, claim is made of New York's first apartment building with complete individual air conditioning and humidity control at 25 East 83rd St. The advertisement goes on to say that the apartment building would be ready for rental on June 15.

They'll Do It Every Time . . . By Jimmy Hatlo



Copyright, 1938, King Features Syndicate, Inc. World rights reserved

Then, to make doubly sure, I wrote to our New York Office to confirm this information.

The following reply was received:

"In reply to your letter, we wish to advise that 400 Park Ave. is only partially air conditioned. Summer cooling is installed, but winter heating is obtained by cast iron radiation. Consequently, we do not feel that this job should be rightly called 100% air conditioned."

"Twenty Five East 83rd St. is definitely in the central residential zone, quite as much if not more than 400 Park Ave., which is at 54th St. The trend for better residences has been uptown for some years. In other words, away from the fifties and toward the seventies and eighties."

Therefore, may we say that The Trane Co. furnished the air-conditioning equipment for the first completely air-conditioned apartment house in the New York central residential zone.

FERDINAND SONTAG,
Advertising Department

Succulent Food For (Frozen) Thought

Lester U. Larkin, Inc.
2235 Sisson St.
Baltimore, Md.

Editor:

I have read with considerable interest and deep sympathy of the plight of Ray Maul, of Independence, Mo., as described so touchingly by B.T.U. in your issue of Oct. 5. I say deep sympathy, because Mr. Maul's plight is infinitely worse than he imagines. I was tempted to send him a telegram warning him not to put on that hat under any circumstances.

B.T.U. has assumed a temperature of 80° F., which the aluminum paint reduces to 60°. Now, it is alleged that the green paint makes the hat "twice as cool." B.T.U. computes this new temperature as 30° F.—but he errs. If it is true that the green paint makes the hat "twice as cool," it logically follows that it eliminates from the inside of the hat half the heat that existed there at 60° F. It thus follows that the temperature inside the hat would be reduced one-half of 520° absolute, reducing it to 260° absolute or -200° F.

Mr. Maul would therefore find his head at a temperature of 232° below freezing, F., instead of the 2° arrived at by B.T.U. Let us hope that this error has not had fatal consequences for Mr. Maul.

L. B. FOWLER

Dutch Engineer Seeks Conditioning Data

Kauw-Laun No. 6
The Hague, Holland

Editor:

After writing a letter to Cutler-Hammer, Inc., asking them if they could name a factory who would give me details for the installation of air conditioning, they advised me to write to you.

I am very interested to know if there are manufacturers who could supply me with full details of:

1. The construction and location of the air canals and the installation of air conditioning new and built homes (small) or apartment buildings.

2. How to rebuild old houses for air conditioning.

With a subtle propaganda there must be demand for air conditioning here in Holland, but therefore it is necessary to supply the architects and housebuilders with full details in the manner of sketches of "how" and "where" to locate the air canals, their capacity needed in relation to the cu. ft. room space, etc. Furthermore the additional price to the building price so that capitalization of the installation might be calculated for renting purposes and selling.

3. Could you tell me a manufacturer of the so-called "winter air conditioning?"

I would be very much obliged if you could tell me the name of a manufacturer who would supply me with this data.

EGBERT N. P. VAN ES, C. E.

Calls 500th Issue 'A Splendid Job'

Peerless of America, Inc.
515 West 35th St.
Chicago, Ill.

Publisher:

Congratulations on the 500th issue. A splendid job. Wishing you continuous success.

M. W. KNIGHT

Wants More 'Around The World' Books

The Coolerator Co.
338 North Audubon Rd.
Indianapolis, Ind.

Editor:

Has George Taubeneck's "Around the World" been further published than the first books issued covering England and Palestine?

If so, please let me know what additional books are available.

LEONARD M. KING,
District Manager

Answer: As yet, no other books in this series have been issued.

Red Book Fills A Valuable Need

Partee Electric Co.
638 Pine St.
Burlington, Wis.

Oct. 10, 1938

Sirs:

We appreciate very much receiving the Red Book. It certainly fills an invaluable need for the service man. Everything is under one cover and no more hunting for parts catalogues and listings.

We would appreciate very much if each concern had their general catalogue enclosed. We are requesting such catalogues to file in the Red Book.

LEONARD R. PARTEE

John Hague
Refrigeration Engineer
3503 Pestalozzi St.
St. Louis, Mo.

Sirs:

Enclosed please find request for a number of catalogues from your Master Catalogue and I thank you for sending it to me and I think it a good idea and you are to be commended for your interest to the trade.

JOHN HAGUE

Distributor-Dealer Doings

'Stop Direct Sales,' Milwaukee Union Tells Distributors

MILWAUKEE—A demand that Milwaukee distributors of household appliances discontinue sales direct to consumers and so-called "industrial" sales, and that they stop the practice of selling obsolete merchandise or close-outs to certain favored accounts has been made by Local No. 1343 of the Household Furniture Sales and Service Men's Union.

These practices, which H. J. Burbach, business representative of the union, said "cannot be condoned by members of the union," are claimed to have been indulged in by certain distributors and serve to "demoralize the industry" and vitally affect the earning capacity and well-being of appliance salesmen.

A distributor who persists in the practices "will be placed on the unfair list and the union members will refuse to handle any articles handled by such distributor," Mr. Burbach told distributor in a letter mailed recently.

"Distributors not only are attempting to sell the retailers, but are at the same time competing with the members of this union by selling retail," Mr. Burbach said. "This is particularly unfair to union members and to the union itself, when it is considered that the employees of the distributors are not members of the union, do not get the union wage scale and do not work under union conditions."

"Some distributors," Mr. Burbach added, "are discriminating against union members by showing favoritism to certain dealers, particularly department stores, by selling obsolete merchandise and close-outs only to such dealers, to the detriment of the earning ability of the members of the union."

"In this regard the union suggests that all merchandise be offered to every franchised dealer at the same time, and that each dealer shall draw from the warehouse until the stock is depleted," Mr. Burbach said.

The union will seek to enter a closed shop agreement with distributors affecting employees within the jurisdiction of the union "in order to avoid the repetition of unfair trade practices and unfair competitive practices and to better the conditions in the industry," the union representative indicated.

Ten Appliance Dealers Exhibit in N. J. Home Show

ELIZABETH, N. J.—More than 10 retailers of electric refrigerators and other major appliance exhibited their products at the fourteenth annual "Own Your Home" show sponsored here Oct. 10-15 by the local chamber of commerce. Two model home projects were on display in conjunction with the show.

Exhibiting appliance dealers included: Albert Lifson & Son, R. J. Goerke, Dengler Libby Burd, Sears, Roebuck & Co., Tokers, Inc., Altenburg Piano House, Burd Electric Co., Levy Bros., Morris Lipton, McManus Bros., and Public Service Electric & Gas Co.

Southeast Commercial Territory Enlarged By Kelvinator

BALTIMORE — The states of Virginia and Maryland have been added to Kelvinator's southeastern sales division with the transfer of the commercial division office to Baltimore from Atlanta, effective Oct. 15.

James A. Lee, formerly assistant sales manager of Kelvinator's air conditioning and automatic heating department, will head the enlarged division, replacing C. D. Taylor, who goes to Detroit as sales manager of Kelvinator's standard commercial and liquid cooling department.

Mr. Lee will handle all Kelvinator commercial franchises in the new southeastern division through the Baltimore office, utilizing the same field personnel formerly operating out of Atlanta.

The new divisional manager, prior to becoming assistant sales manager of the air conditioning and automatic heating department in Detroit, was the sales manager of the Kelvinator commercial distributor in Shreveport, La.

Minneapolis Man to Head Northwest Dealer Group

MINNEAPOLIS—H. A. MacDowell, Minneapolis, was named president of the Northwest Radio, Refrigeration & Appliance Association when the organization held its annual meeting in the Curtis hotel here recently.

Other officers are: L. R. Watson and A. J. Newman, both of St. Paul, vice presidents; A. L. Toepel, Minneapolis, secretary; and P. J. Brady, Minneapolis, treasurer.

Directors elected are: W. H. Warmington, chairman of the board; C. G. Waldron, F. M. Hutchinson, L. R. Watson, James Pause, A. L. Toepel, Harry Solter, A. J. Newman, F. A. Forster, P. J. Brady, R. E. Swanstrom, H. W. Hale, A. L. Milner, J. E. Kelly, H. A. MacDowell, E. Hintz, John McGowan, George Johnston, S. E. Stenson, R. O. Foster, Jr., Earl Gammons, Al Knaeble, and George Hanson.

Sales Veteran Heads Staff of San Antonio Dealership

SAN ANTONIO, Tex.—George Fake, associated with electrical appliance sales for the past 19 years, and recently connected with the Ellis Chaney Co., Norge distributor here, as retail contact man, has joined Claude Courand, Norge dealer, as sales manager.

J. B. Daniel Takes Over Haeske Radio-Music Co.

TULSA, Okla.—The J. H. Haeske Radio-Music Co. at 524 South Main has been purchased by J. B. Daniel, former manager and part owner, and is now being operated as the J. B. Daniel Appliance Co. The firm is a dealer in Electrolux refrigerators, Chambers gas ranges, and RCA-Victor radios.

Los Angeles Dealer Opens New Headquarters



Thoroughly modern is the new dealership headquarters opened by Harry E. McConnell, dealer-distributor of Electrolux gas, kerosene, and bottle gas refrigerators in five southern California counties. Full-length show windows provide ample display (left); comfortable interior arrangement is shown at right.

125 Kelvinator Retail Men Attend Jamboree

DETROIT — Approximately 125 dealers and salesmen were guests of the Detroit Kelvinator branch at a "Walsh-Kelvinator Jamboree" held Oct. 6 at the Forest Lake Country club. The occasion was the presentation of awards based on retailers' performance during the "Job Makers' Campaign" sponsored by the branch during September, and also observed the beginning of Kelvinator's "silver anniversary" year.

Dealers and salesmen qualified for the celebration on the basis of "man-days" of work they compiled during the campaign, figured on the basis of nine man-days for a refrigerator, six man-days for a range, and three man-days for a washer.

Golf matches, supervised by Jim Taylor, a seven-inning softball game between the West Side "Champion Ice Makers" and the East Side "Finflex Agitators" umpired by Ralph Cameron, with Larry Ward in charge of arrangements, horseshoe contests supervised by Al Cadieux, and "roman games" directed by Herb Eidt occupied the afternoon program. Suitable prizes were awarded top men in each event.

R. W. Walsh, branch manager, was master of ceremonies at the dinner in the club house that evening. Winners of awards in the "Job Makers" drive were:

Art Sievert, City Music Co., Detroit, who accounted for 156 man-days with sales of 14 refrigerators, and a number of ranges and washers; Vernon Vowels of Harper Appliances, Dearborn; Les Carroll of J. L. Hudson Co., Detroit; Leonard Wilson of Good Housekeeping Shop, Detroit; Bill Deneen of Harper Appliances; and Latham S. Perkins of Good Housekeeping Shop.

Speakers at the banquet included J. B. Ogden, manager of the housewares department of J. L. Hudson Co., and Frank Hackett, sales manager of Good Housekeeping Shops. Hudson has been a Kelvinator outlet for 17 years, and Good Housekeeping Shop for 12 years.

Albion, Ind. Dealer Suffers \$19,000 Damage From Fire

ALBION, Ind.—Fire of unknown origin Oct. 18 completely damaged the \$17,000 stock of the Himes Hardware Store, Frigidaire dealer here. An additional \$2,000 damage was done to the building.

Pioneer Service Man Occupies New Store

LOS ANGELES—Harry E. McConnell, long active in the refrigeration industry here and an appliance dealer since 1933, has moved across the street to new and larger quarters. The new store has a frontage of 80 feet and a floor area of 4,000 sq. ft.

Mr. McConnell, who specializes in Electrolux products, not only sells Electrolux refrigerators in Los Angeles, but also serves as distributor for kerosene and tank gas models in five southern California counties.

As far back as 1919, Mr. McConnell serviced Isco and Frigidaire units. His later service experience included Kelvinator, Norge, and Servel Electrolux. He operated an independent service operation from 1929 to 1933, when he made his entry in the merchandising field.

Coupe-Trailer Delivery Outfit Serves Dealer

MONTREAL, Que., Canada—A Ford coupe combined with a trailer constructed on a ¼-ton Ford delivery truck chassis forms a refrigerator delivery unit which has been operated satisfactorily during the past two or three years by Modern Household Appliances, Ltd.

Ten CD-2 model Frigidaires can be carried on the trailer, and two more on the rear bumper of the coupe. Modern Household Appliances has transported some 1,000 units with this assembly, according to estimates of H. M. Milne.

Leo Snyder Heads Simon Branch in Baltimore

BALTIMORE—Leo Snyder has been promoted to the managership of the Baltimore branch of Simon Distributing Co., Hotpoint distributor here and in Washington, D. C.

A veteran of the appliance merchandising business, Mr. Snyder has seen sales service with Columbia Wholesalers, Inc. He joined the Simon Distributing organization about a year ago.

Saginaw, Mich. Firm To Handle Apex Line

SAGINAW, Mich.—Jones Philco Co. here, of which J. E. Jones is president and general manager, has been named distributor in northern Michigan for Apex refrigerators, washers, ironers, and vacuum cleaners, according to an announcement by C. W. Smith, sales manager of Apex Rotarex Corp.



VIRGINIA SMELTING COMPANY
WEST NORFOLK, VIRGINIA

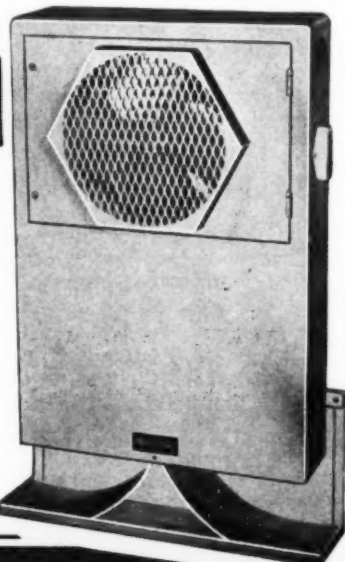
KRAMER panel Type UNIT COOLER

1. Three sizes—balancing ¼, ½, and ¾ H.P.
2. Handy to install and service—door swings open.
3. Built-in heat interchanger for smoother valve action.
4. Accurately rated, all copper coil.
5. Attractively streamlined design finished in white baked-on enamel.
6. Ceiling models at slight extra cost.

Solves Many Coil Space Problems

Send for Complete Bulletin

KRAMER TRENTON AUTO RADIATOR WORKS
TRENTON, N. J.



DEHYDRATED AND SEALED

LINDERME

SEAMLESS Copper TUBING

LINDERME TUBE COMPANY
CLEVELAND OHIO, U.S.A.

Air Conditioning

Control of Biological Changes Is Air Conditioning's Role In Brewing, Elliott Tells Master Brewers

BUFFALO—Control of biological changes which occur during the brewing of beer was named as air conditioning's No. 1 job in the brewery by C. I. Elliott, Carrier Corp. engineer, before the Master Brewer's Association here recently.

Air conditioning is one method through which brewers can keep "these biological changes in the same order and under definite control, thus maintaining uniformity and quality of product," Mr. Elliott said.

He emphasized, however, that the brewer or his engineer should have a complete knowledge of air conditioning and what it will do for him before attempting to put it into use. He said controllable factors of air conditioning are temperature, humidity, air motion, and air purity.

"By correct use of these factors the conditioned area may be made hot or cold, wet or dry, quiet or drafty, clean or dirty, or any condition between these extremes. By use of air conditioning, a wet room can be made dry, a foggy room made clear, a room filled with undesirable spore made clean, uneven temperature made uniform, wet corners dried up, and condensate on ceilings and walls removed."

He pointed out there is no standard method of application, due to the various sizes of rooms, different loads, different uses and variety of requirements. Departments in which air conditioning has been used to advantage, he said, are: Kuhl Schiff, Baudelot cooler room, starting room, fermenting room, stock cellar, government cellar, racking room, barrel

storage, yeast storage, hop storage, laboratory, office, wash house, bottle shop, filter room, and beer aeration.

Mr. Elliott listed the starting and fermenting cellars as "musts" for air conditioning.

"It is in the starting cellar that the greatest danger of infection exists," he warned. "The wort is at the correct temperature for infection, and the period between entering the starting cellar and the time the pitched yeast becomes started in order to build up resistance against infection, is the most vulnerable during brewing."

"The starting cellar should be carefully conditioned, particularly with a view to a sterile and clean condition. It is important to avoid direct currents of air over the starting tub."

"Accurate temperature and humidity are also essential. The natural protective layer of heavy CO₂ on top of the starting tub should not be disturbed. The density of this gas film is such as to cause many undesirable infectious particles to float off the surface."

HUMIDITY CONTROL

"Humidity should be maintained at a point where condensation on the ceiling will be eliminated, since this will collect infectious particles and when falling will drop through the gas film into the wort and thus start infection."

"The conditioning equipment consists of heating and cooling coils, sprays, eliminators, fans, and filters with the required controls. One way of circulating the air is delivering the air on the floor under the tubs at a high velocity and taking the return at the ceiling. In this manner the bottom of the tubs is maintained in a clean condition, corners are dry, and foreign yeast spore does not grow in dry places."

Of the need for air conditioning in the fermenting cellar having closed or open wood or steel tanks, he explained:

"Here air conditioning is essential to maintain correct temperature, humidity, air motion, and cleanliness. Maintenance of correct temperature in order to allow attenuator coils to be effective, correct humidity to prevent condensation on walls, ceilings, or equipment, to dry up floors and equipment after washing, to prevent top yeast from hardening on equipment, to eliminate damp corners or location where wild yeast might grow, supply sufficient ventilation to keep the CO₂ concentration below 3%, and for the comfort and safety of workers."

USE OF FILTERS

"All fresh air should be filtered by the use of efficient filters. This fresh air intake should be located away from all exhaust or vent pipes."

A summary of Mr. Elliott's points was as follows:

1. Air conditioning will give better bacteriological control of an industry which is a series of biological changes.
2. It will reduce maintenance of building and equipment.
3. It makes for better working conditions, assures happier workers, and greater production.
4. It will provide free ceilings and side walls, eliminating defrosting difficulties concurrent with piping.
5. When applied to new structures will reduce building costs.
6. It costs less to own.

Chicago Installations Set New High Mark

CHICAGO—Contracts for central-plant air-conditioning systems closed in Chicago during the first nine months of this year set a new all-time high mark in number, but were down from 1937 totals in capacity, according to statistics compiled by Commonwealth Edison Co.

A total of 297 air-conditioning installations were sold during the period, compared with 258 in the corresponding months of 1937, an increase of 11%. Combined capacity of installations was 4,404 hp., compared with 11,153 hp. in the same period of last year, a decrease of 61%.

In addition to these central-plant conditioning systems, 358 electric room coolers were sold by Chicago dealers during the period, compared with 291 in the first nine months of 1937, an increase of 23%.

Contracts for 10 central-type systems with an aggregate capacity of 201 hp. were closed in September of this year, as compared with 12 contracts representing a total capacity of 286 hp. in September, 1937.

Restaurants led all business classifications in installations during the first three-quarters of this year, with general offices and buildings, clothing, and department stores, drug stores, funeral parlors, and candy stores being other large users.

Contracts obtained in the first nine months were divided as follows:

Restaurants	86
General offices and buildings	52
Clothing and department stores	24
Drug stores	21
Funeral parlors	20
Candy stores	14
Residences	9
Shoe stores	9
Beauty shops	8
Food stores	7
Miscellaneous stores	6
Theaters	6
Doctors' and dentists' offices	4
Miscellaneous industrial plants	4
Private offices	4
Amusement parlors	3
Churches	3
Hotels	3
Fur stores	3
Studios	3
Banks	2
Hospitals	2
Candy factories	2
Bakeries	1
Print shops	1
Total	297

N. Y. Restaurant Exhausts Air 85 Floors Above

NEW YORK CITY—Notable feature of the air-conditioned restaurant recently opened by Longchamps, Inc. on the ground floor and basement of the Empire State building at the corner of Fifth Ave and 34th St. is the fact that heat absorbed by the 100-ton air-cooling system is released to the atmosphere at a point 85 floors above the restaurant.

Exhaust air from the system is drawn down a huge duct to an evaporative condenser located in the second basement of the building by means of a 15-hp. fan. The duct, made of 10-gauge iron, is so large that a team of horses could be driven through it.

The condenser connects with a vertical stack, 30 sq. ft. in cross section, rising to the eighty-fifth floor, where the heated air is exhausted by a 40-hp. blower.

Two General Electric 50-hp. compressors furnish necessary refrigeration. The compressors are each equipped with 50% capacity cut-outs, which permit the plant to be operated at any desired point from 25% to 100% of capacity.

Architect and designer for the restaurant was Ely Jacques Kahn. Consulting engineers were Jaros, Baum, and Boles, and the air-conditioning contractor was Baker, Smith & Co.

Westinghouse Distributor Adds Combination Window Line

DETROIT—Mechanical Heat & Cold, Inc., Westinghouse air-conditioning distributor, has been appointed exclusive distributor in this territory for the Phoenix combination screen and storm window manufactured by F. C. Russell Co. of Baltimore, according to an announcement by J. H. Keller, sales manager of Mechanical Heat & Cold, Inc.

Symposium Scheduled on Comfort Conditioning

(Concluded from Page 1, Column 5) engineer of the Chicago Board of Education, will preside at the symposium, to which members of sponsoring organizations, their guests, and all others interested in the subject are invited. The Engineering Building auditorium seats 1,200 people.

Speakers will include Prof. Philip Drinker, Harvard university; Willis H. Carrier, Carrier Corp.; Albert Buenger, Delco-Frigidaire Conditioning division, General Motors Corp.; Charles S. Leopold, Philadelphia consulting engineer; Elliott Harrington, General Electric Co.; John R. Hertzler, York Ice Machinery Corp.; and William B. Henderson, executive vice president of ACMA.

Prof. Drinker will discuss the requirements for comfort, and the limits suggested for air-conditioning standards with regard to temperature, relative humidity, movement, and cleanliness.

Mr. Carrier's talk will deal with air conditioning from the lay viewpoint and will outline its general history, health and comfort requirements, general air-conditioning standards, scientific research, some national figures in air-conditioning discoveries, and the resulting main problems of air conditioning.

Mr. Buenger in his address will dwell on the architectural problems of insulation and constructional features to provide for air-conditioning installations, as well as air-conditioning costs and economic features.

Mr. Harrington will outline some practical applications of air conditioning with regard to residential buildings, commercial buildings, and public assembly rooms.

Mr. Hertzler will discuss refrigeration as applied to air conditioning, while Mr. Henderson will present a broad view of manufacturers' products available to the air-conditioning industry for human occupancy.

Cooling Increases Sale of Candy

LINCOLN, Neb.—As a direct result of installing an air-conditioning system in his drug store last spring, Don Mattison, manager of the Bradford Drug Co. here, reports that 30% more candy was sold this summer than during the same period a year ago.

"The air-conditioned store enabled us to use high quality boxed candies for display on the floor, where last year we could not do this," Mr. Mattison said. "We have found that in order to sell candy we must have an adequate display, and an air-conditioned store is necessary to do this during summer months."

Mr. Mattison found that customers get the impression the candy is fresher if a large display is in evidence.

"They seem to get the idea that the store does a rushing business in candy," he said, "and that they are assured of fresh goods. If only a few boxes of chocolates are on display, the customer gets the idea that these boxes are 'heirlooms.'"

The druggist also pointed out that air conditioning has protected his store against the undesirable word-of-mouth publicity that goes with the sale of box candy in which the chocolate has melted or discolored.

Conditioning Cuts Hotel's Towel Laundering Costs

ALEXANDRIA, La.—Value of air conditioning in reducing towel laundering costs is reported by John Hudson, manager of the Bentley hotel here, in commenting on the results of the hotel's conditioning system.

Guests in air-conditioned rooms used about one-third as many towels as those in the non-air-conditioned rooms, Mr. Hudson reported. At a laundering cost of \$1.25 per 100, this represents a considerable saving, he points out.

PENN Leads in AUTOMATIC SWITCHES AND CONTROLS
Write for Catalog
PENN ELECTRIC SWITCH CO.
GOSHEN, INDIANA

Airtemp Names 9 Dealers And 3 Distributors

DAYTON, Ohio—Appointment of three new distributors and nine direct dealers has been announced by officials of Airtemp, Inc., air-conditioning division of Chrysler Corp.

The new distributors are: Neis & Brecht Co., West Allis, Wis.; T. A. Walker, Inc., Torrington, Conn.; and the Merryweather Co., Akron, Ohio.

New direct dealers appointed are: The Barnesville Development Co., Barnesville, Ohio; George A. Dennis, Napoleon, Ohio; Thorne & Price, Benton Harbor, Mich.; Tollerton Engineering Co., Youngstown, Ohio; Campbell J. Graf, Columbus, Ohio; Malone's, Mansfield, Ohio; W. C. Line Co., Inc., Springfield, Mass.; Robert B. Payne, Inc., Fredericksburg, Va.; and Potter Radio Agency, Sayre, Pa.

3 Room-Cooler Accessories Introduced By Philco

PHILADELPHIA—Three new accessories for the Cool-Wave portable air conditioner have been made available by the parts and service division of Philco Radio & Television Corp.

A thermostat which will provide automatic temperature control is being supplied for installation with any Cool-Wave unit, thus making possible regulation of room temperature according to personal requirements.

Special casters also are being made for use where mobility of the portable unit is desirable. In addition, an extra size window grille board is available. This extra size board is supplied in a width of 72 inches, but can be cut down to individual oversize measurements.

SAVE 20-40%
Write for details of
Alco's new Small
Capacity "TK"
Thermo Valve
Alco Valve Co. - St. Louis, Mo.

BUNDY TUBING
Copper-Braced Steel. Copper Coated Inside and Out. Sizes: 1/4" to 1/2" O.D.
BUNDY TUBING CO., DETROIT

You Can Install
SPORLAN
THERMOSTATIC
EXPANSION
VALVES
with Confidence!

PAR CONDENSING UNITS
28 MODELS
1-4 TO 20 H.P.
WRITE FOR FREE CATALOG
MODERN EQUIPMENT CORP.
DEFIANCE, OHIO, U. S. A.

"Superior by name
Superior in Quality"
SUPERIOR
VALVE & FITTINGS CO.
500-3715 ST. PITTSBURGH, PA.
Manufacturing a complete line of DIAPHRAGM PACKLESS VALVES, MANIFOLDS, ACCESSORIES AND FITTINGS for the Refrigeration and Air Conditioning Industries
FORBES PRODUCTS

M&E
EST. 1866
Compressors
MERCHANT & EVANS CO.
Phila., Pa., U.S.A. Plant at Lancaster, Pa.

KERO TEST
Valves and Fittings
The Standard of the Industry
Kerotest Manufacturing Co.
Pittsburgh, Pa.

FOR SEAL REPLACEMENTS
USE CHICAGO SEALS
CHICAGO SEAL CO.
9 S. CLINTON ST. - CHICAGO, ILL.

BRUNNER
Send for the New
REFRIGERATION CATALOG
Seven Models of Compressors
Fifty-eight Models of High-sides from 1/4 H.P. to 15 H.P.
BRUNNER MANUFACTURING CO.
UTICA, N. Y.

Anaconda Copper Refrigeration Tubes
Smooth as ice inside!
THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
General Offices: Waterbury, Conn.

Dayton
V-BELTS
Silent, vibrationless, dependable, long-lasting. Powerful grip prevents slippage. A nearby distributor carries a complete stock for appliances and machines.
THE DAYTON RUBBER MFG. CO., DAYTON, OHIO
World's Largest Manufacturer of V-Belts

4 More Manufacturers Complete Plans For All-Industry Exhibits

Announcements of their All-Industry Exhibition plans were received last week from the following companies:

Virginia Smelting Co.

WEST NORFOLK, Va.—Three refrigerants manufactured by Virginia Smelting Co.—V-Meth-L (Virginia methyl chloride), Extra Dry Esotoo (refrigeration grade liquid sulphur dioxide), and methylene chloride—will be exhibited by this company at the First All-Industry Exhibition to be held Jan. 16-19 at the Stevens hotel, Chicago, reports Rollin H. Israel.

Distribution of these refrigerants, at present, is handled largely through independent parts jobbers and supply houses, supplemented by direct factory coverage to selected individual accounts. Warehouse stocks are maintained in several cities.

Naturally the company is most interested in having this portion of the trade attend the exhibit, but also would appreciate attendance by the following groups: dairy and ice cream companies and service managers; refrigeration machine manufacturer representatives and distributors; air-conditioning contractors and fabricators; service managers of transportation companies, chain stores, and other large-scale buyers of refrigeration parts and supplies; and independent service men, Mr. Israel reports.

Personal invitation and solicitation through factory representatives is being employed by the company in effort to boost the show's attendance. In addition, an aggressive letter-writing campaign is being carried on by the firm's West Norfolk, New York City, and Boston offices.

Dayton Rubber Mfg. Co.

CHICAGO—Dayton Rubber Mfg. Co. will exhibit its complete line of V-belts and pulleys especially designed for fractional horsepower service and its line of cog belts and pulleys for heavier duty at the First All-Industry Refrigeration & Air Conditioning Exhibition Jan. 16-19 at the Stevens hotel here, according to an announcement by J. D. Hershey, assistant director of advertising.

An innovation to be displayed by the company is its new packaging arrangement of V-belts and pulleys. An instructive background and several moving displays will be used to bring out the important features of Dayton products.

At present the company handles its distribution largely through refrigeration and air-conditioning supply jobbers and through mill supply houses, Mr. Hershey reports, and hopes that this portion of the trade will be well represented at the show. Contact also is desired with designing engineers.

The company plans to announce its exhibit space in its regular advertising, and will cooperate with the show committee in utilizing any promotional materials it furnishes, Mr. Hershey says.

Larkin Coils, Inc.

ATLANTA—A complete display of electric refrigeration coils, disseminator pan and coil combinations, "Icy Rapids" liquid coolers, forced air "humi-temp" units, and other Larkin products will be exhibited by Larkin Coils, Inc. at the First All-Industry Exhibition in Chicago next Jan. 16-19, announces O. M. Sims, vice president.

Larkin builds coils for walk-in coolers, side icer coolers, and service box refrigerators, grocery or short-order refrigerators of center and side bunker type, and also of top and rear bunker type, back bunker top display cases, bunker counters, top display and freezer cases, and for installations where fins on a single row of tubing are desired.

Larkin also manufactures a selection of bare tube coils, and vacuum plate coils.

The Larkin Icy Rapids liquid cooler is designed for direct water cooling and indirect beverage cooling applications, including conventional beer draught cooling, novelty boxes, milk boxes with aerators, bottled drink boxes, brine cooling, and circulating or dead-end water cooling.

Larkin forced air humi-temp units are said to provide uniform temperatures and rapid cooling throughout the fixture. The assembly consists of a considerable tube and fin area, coil surface, blower fan mounted behind, and aluminum housing. Drip pan is included, and a header is provided where necessary. The units may be equipped with brine or cold water connections, according to Mr. Sims.

"Our present method of distribution," said Mr. Sims, "is through jobbers and, of course, direct to the larger manufacturers. We would like to have jobbers and manufacturers attend the exhibition."

"We are planning to contact our customers, inviting them to attend the show in Chicago. We will write personal letters to a number of these in the near future."

Duro Products Co.

CHICAGO—A complete line of special tools adapted to modern refrigeration and air-conditioning service work will constitute the display which Duro Products Co. will sponsor at the First All-Industry Exhibition Jan. 16-19 at the Stevens hotel here, reports W. Thiessin.

Several of these tools will be newly designed, and a range of popularly priced service kits for packing gland and valve stem adjustments also will be introduced to the trade. In addition, the list of new products will include a line of Phillips-type screw drivers for cabinet work, and a range of fly-wheel pullers, pliers, and adjustable wrenches.

Duro products are nationally distributed through refrigeration and air-conditioning parts and supply jobbers.

Invitations to the show are being extended by correspondence as well as through the company's salesmen, Mr. Thiessin says.

Study Your Problem, Then Let 'Subconscious Mind' Solve It, Prof. Moore Advises Detroit A.S.R.E.

DETROIT—Professor A. D. Moore, of the college of electrical engineering, University of Michigan, addressed the Detroit section of the American Society of Refrigerating Engineers on "Inventions and Inventing" at a meeting Oct. 18 in the NEWS offices.

Otto Klopsch, chief engineer of Wolverine Tube Co., Detroit, also presented an illustrated talk, explaining how copper tubing is made.

Special guest at the meeting was F. E. Hansen, of F. C. Lovelock Pty. Ltd., of Sydney, Australia. Mr. Hansen gave an impromptu talk in which he pictured the refrigeration and air-conditioning business in Australia, compared it with that in the United States, and briefly touched upon the economic, social, and geographical conditions of the land "down under."

It was Prof. Moore's contention that the truly worthwhile invention is one which, in the end, simplifies things. However, he pointed out, the invention itself may be complicated providing it justifies its complication by turning out a simplified product.

To illustrate this point, Prof. Moore said that the tools used in riveting two pieces of steel to form a joint are very simple, but the resultant joint is very complicated. On the other hand, the equipment used in welding two pieces of steel is quite complicated, but the resultant

joint is the utmost in simplicity.

Prof. Moore remarked that it is surprising that in most cases inventions have not been made by the obvious persons, but by persons in other fields of endeavor.

For example, he said, the Spencer snap-action type switch was invented not by an electrical engineer or any other electrical worker, but by a young man stoking a boiler furnace who noticed that a small door on his furnace popped in and out whenever the furnace heat reached a certain high or low degree.

This man, Spencer, applied his discovery to toys, and it was a long time until the idea was adapted to an electric switch, said Prof. Moore.

The "law of specificity" was defined by Prof. Moore as a human trait which causes people to do things only in the way they were taught, and to be generally incapable of seeing how their knowledge can be applied in a different field.

Prof. Moore said that people should try to make themselves capable of seeing how things in other fields can be used in their own, and how things in their own field can be used in others.

He also advocated increased use of the subconscious mind in solving problems.

By this method, he said, the individual should think of and study his problem from all angles,

then purposely refrain from trying to make a decision, and then go to sleep to permit his subconscious mind to act and reach a conclusion of its own accord.

In his talk, Prof. Moore used several lecture "props" to illustrate various statements he made.

John Wyllie, general manager of Tempite Products Corp., was chairman of the meeting.

Next meeting of the Detroit section, will be held Nov. 15. Dr. Bion R. East, technical consultant of Vitex Laboratories, Inc., Harrison, N. J., will talk on "Dairy Refrigeration and Its Relation to Public Health." A motion picture on the manufacture of coils will be shown by M. W. Knight, sales manager, Peerless of America, Inc. F. M. Cockrell will be chairman of this meeting.

250 Dealers In 2 States Plan Joint Campaign

OMAHA, Neb.—Support to a co-operative sales campaign for the final quarter of 1938 was pledged by more than 250 electrical appliance dealers of Omaha, Council Bluffs, Iowa, and other towns in Nebraska and Iowa, at a fall sales meeting held here recently by Nebraska Power Co.

After a brief address by J. E. Davison, power company president, plans for the closing drive of the year were presented by Mrs. B. E. Marsh, retail sales manager, and Paul Ervin, display manager of Nebraska Power Co.

THE BUYER'S GUIDE

MEET US IN BUFFALO

● Our bags are packed — we're on our way to the Fifth Annual Convention of the Refrigeration Service Engineers' Society, Hotel Statler, Buffalo, Nov. 2nd, 3rd and 4th.

We'll be seein' you in Booth 8.

PEERLESS of AMERICA, Inc.

NEW YORK FACTORY
43-20 34th Street
LONG ISLAND CITY

MAIN FACTORY—GENERAL OFFICES
515 West 35th Street
CHICAGO

PACIFIC COAST FACTORY
3000 S. Main Street
LOS ANGELES

EXPORT DIVISION: P. O. Box 636, Detroit, Michigan, U. S. A.



ZEROSTREAM

Sensational

BOTTLE BEVERAGE COOLER

An exclusive Koch development offering unusual sales opportunity to live dealers

WRITE • WIRE • PHONE

KOCH REFRIGERATORS

NORTH KANSAS CITY, MO.




Ranco's LATEST DEVELOPMENT—Type "G" Commercial Control!

RANCO Type "G" Control is designed for a wide range of commercial applications. It has many features never before available in a simple, compact unit. Stainless steel springs and toggle mechanism. Rigid steel case with snap locking cover. Long life and accurate operation.

Type "G" Controls may be furnished with Ranco's proven overload element. A pilot circuit contact is optional.

Write for Bulletin.

Ranco INC.,
Columbus, Ohio, U.S.A.



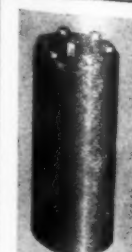
"AMERICA'S BELT BIBLE"

FREE 1938 Gilmer Belt Catalog

Most complete f. h. p. belt catalog ever issued. 144 Pages. Belts for 4450 models, 135 makes of electric refrigerators listed by lengths, cross-sections, manufacturers' part numbers.

Your copy FREE

Send your Name and Address to
L. H. GILMER COMPANY, Tacony, Philadelphia



HIGH SIDE FLOATS FOR FREON

The increasing use of Freon-12 in small commercial units is one factor leading to a wide use of high side floats.

Aminco High Side Floats have been developed for Freon, as well as SO₂ and Methyl Chloride, in a variety of sizes and differing shell lengths.

Information regarding Aminco High Side Floats gladly furnished on request to the factory or your favorite jobber.

AMERICAN INJECTOR COMPANY
1481 FOURTEENTH AVENUE, DETROIT, MICH.
Pacific Coast: Van D. Clothier, 1615 E. 16th, Los Angeles, Calif.

Rural Refrigeration Set For Growth In Next 10 Years, Fiske Predicts

(Concluded from Page 1, Column 2)
A.S.R.E., gave some enlightening figures on the great lack of refrigeration on the farm up to the present time, despite the fact that farmers represent more than one fourth of the food consuming population of the entire country.

"Every branch of refrigeration has had its beginning and success in the city," Mr. Fiske pointed out. "Ice, cold storage, commercial refrigeration, the electric refrigerator, were all designed for the city market."

"When the electric refrigerator became a reality, we were slow to realize that for nearly the first time the farm had a method of refrigeration. A third of our population is still virtually unsupplied with something for which it has obvious need as consumer."

"The small machine also greatly influences the possible practices of the farmer as a producer. The possibility of a trend away from the city cold storage plant has been a private dread of that branch of industry for years, other factors, such as truck transportation, being vitally involved also."

"Rather than a few very large

warehouses to take care of the foods of the nation, days and weeks after harvesting, we may think more now in terms of a large number of small plants, community or private, or for the individual farmer."

The farmer, on a 50-50 basis with food manufacturers as a producer of perishables, is woefully short of refrigeration by comparison with the ice cream, packing industries, and the others, according to available figures, Mr. Fiske declared. Data on the sale of electric current to farms would indicate that the consumption of power is far less than in the perishable food manufacturing industry, and that only some unknown small fraction of that power is used for refrigeration.

"There is a vital relationship between farm food production and cold storage facilities," the speaker said. "Cold storage plants were first thought of as large establishments in large cities near markets to even out price fluctuations. Then we saw a tendency to build plants near the point of production. This is especially pronounced in the case of fruits shipped from the western states."

"This development gradually gave way to smaller plants served by trucks rather than by railways. The trend continues with every likelihood of the increased sales of smaller storage plants in the country, down to the commercial cooler for the individual farmer."

"The public cold storage space in largest cities declined in the past decade, while the rest of the country made a gain of from 122 million to 196 million cu. ft. These figures are striking when one recalls that in the late 20's a number of huge plants went up at railway terminal facilities in cities."

"There are a number of reasons for expecting the growth of rural storages to proceed at still a greater pace in the next 10 years. We see already a great activity in the farmer's locker plant. Secondly we have quick freezing, tending to decentralize and multiply refrigeration facilities. And of continuing great importance, are fruit, vegetable, and egg production."

ESTIMATING CONSUMPTION

"In order to estimate the size of the food consumption of farmers one must know the average family income and the portion of it spent for food. Information is scarce and not too reliable on the second point, but studies of several thousand families surveyed by the Brookings Institution gives a line on this."

"In the grand total we find that the value of food consumed by the farm population in this sample year was \$3,465,000,000, as compared to \$19,761,000,000 for non-farm families. To compare these figures as a basis of estimating refrigerator needs, they must be adjusted for prices, because the farmer's food is reckoned at the lowest food prices and the others' food at the highest, or retail prices. "After this adjustment is made, we find that 27.7% of the refrigerator market is on farms."

"Only 23.7% of the farm homes worth \$500 or more now have electricity, and upon the progress of electrification everything depends as to when refrigeration can reach the farm."

'APPETITES HAVE LIMITS'

"The population of the community food or locker plant is an indication of the shortage of food preservation facilities at the farm. Estimates have put the number of farmers' locker plants at 2,000, which if true would indicate a total capacity of 4 to 15 million cu. ft. compared to the regular cold storage space shown in total for 1937 at 333 million."

We must always regard the food business as an essentially conservative one. People must eat, but appetites have their limits. The food industry goes up less than others in good times, and falls less in bad ones. Refrigeration must make its progress when food prices are rising, that is, when times are good."

Following the presentation of the subject "Refrigerated Locker Plants" by A. A. Geiger, locker plant specialist from the York Ice Machinery Corp., a lively discussion developed about locker plant construction and operating practice.

SEEK LOWER TEMPERATURES

Independent students of locker plants, such as university experts and government officials, are advocating lower temperatures in the locker rooms of such plants, especially where frozen fruits and vegetables are being stored, declared Mr. Geiger.

Temperatures of 10° F. are satisfactory where fruits of the wet-pack type (which are packed in a sugar-water solution) are being kept, but a room held at 0° F. is recommended for the dry-pack type.

Mr. Geiger, in describing the difference between the wet pack and dry-pack types, said that the wet type requires more space, but is generally thought to be the better method.

To have the locker room held at lower temperatures with a minimum of first and operating costs it is wise to increase the amount of insulation, asserted Mr. Geiger. A proper increase in insulation will minimize the additional refrigerating effect needed, he said. For a 0° F. room, 8 inches of cork insulation, or its equivalent in other materials, should be used.

For a locker plant to obtain 100% rentals (or close to it), the plant owner or operator must be a merchandiser. He must know how to get people interested in becoming

patrons of the plant, said the York expert.

Various schemes and methods have been tried, explained Mr. Geiger, including efforts to work through co-operative organizations and other such groups, but these efforts have only served to demonstrate that a straight advertising and promotion program is the most effective.

"The plant owner should first advertise the services offered by his locker plant in the local and surrounding town newspapers," declared Mr. Geiger. "He should then follow this up with direct-by-mail advertising."

"Possibly as important as the advertising is the grand opening that should be held by every locker plant owner who opens a plant."

'FREE INSPECTION'

"This grand opening should have plenty of ballyhoo and should emphasize the point that the plant is open for 'free inspection' by the public. This 'free inspection' has proved a winner in getting customers for plants."

"To make a 'grand opening' fully effective in getting customers for the plant, the owner shouldn't let the public wander around aimlessly. The plant should be in operation, and groups of people taken on conducted tours to see just how the plant really operates. Someone who can give a good selling talk should conduct the tour."

Mr. Geiger presented a table which gave a chart of probable operating costs and profits for two different sizes of locker plants. There was some discussion about the figures given in this table, some meat packer representatives present doubting whether the amount of food processed would be as much as shown.

EXCEED ESTIMATE

However, a representative of the TVA who had made a study of a plant put up in Tennessee gave figures showing that in the first eight months of operation, an average of 600 lbs. of food per locker had been processed; he had estimated, when the plant was built, that only 500 lbs. per locker would be processed in a year.

More open discussion on locker plants took place at the second day's sessions, at which several papers were given which touched upon the subject.

A representative of the Rural Electrification Administration said that he had heard that 75% of the plants in Iowa had gone through a reorganization in capital and management. This was not substantiated by any of the others present, many of whom have made intensive studies of the locker field.

This man stated that the REA was going ahead to sponsor a model plant, however, presumably in Tennessee.

C. A. Mann of the Farm Credit Administration put two questions about the locker business:

1. Is the cost of metal lockers too high in proportion to their value? (He claimed to have known of users who reverted to the wood slat type of locker after having originally used metal lockers.)

2. Is the locker plant to be a mere depository for the farmer's own food supply?

Several of those present replied to the first question. W. E. Guest, consulting engineer of Chicago, said that good wood lockers are all right, but that they weren't recommended for best and most sanitary locker plant operation.

SANITATION FACTOR

Mr. Geiger declared that modern housewives would not stand for the unsanitary appearance and atmosphere of wood lockers, and since the housewife must be sold on the locker plant idea, the smart owner will put in the best-appearing lockers possible.

Harry Carlton of the agricultural extension department of the University of Tennessee stated that sanitation is a factor in lockers, and that it would be inadvisable to use any absorbent type of material. Another food expert present, however, pointed out that perishables had been shipped in wood containers for many years (butter in spruce and ash tubs, for example) without any objections.

In reply to Mr. Mann's second question, relating to whether or not the locker would be only a mere depository for the farmer, it was pointed out that many city patrons were already using it, that it was being used also for quick-frozen fruits and vegetables, either locally or remotely frozen, and was also being used for game shot by city dwellers.

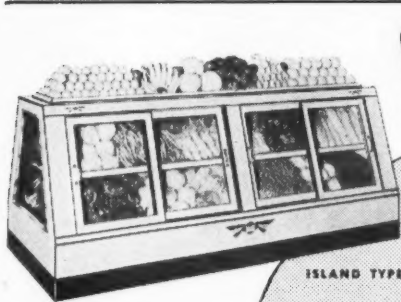
FREEZING COSTS

In his talk on "Quick Freezing of Fruits and Berries," R. B. Taylor of the University of Tennessee Engineering Experiment Station gave some interesting figures on freezing costs and frozen foods transportation methods.

A very careful cost analyses of electrical current and water used showed the cost of freezing to be .29 cents per pound of strawberries.

In transporting frozen foods from Tennessee to New York in a mechanically refrigerated truck (with power take-off in road use and a direct power line for use in garages) equipped with holdover plates, the temperature rise in the truck was slightly less than 1° F. for the trip.

THE BUYER'S GUIDE



SHERER
"VEGETAIRE"
meets every requirement for Refrigerated Produce Display. One or more belongs in every market handling produce in your territory.

"VEGETAIRE"
THE PRODUCE MASTERPIECE



Equipment and Compressor Sales go together. Sell both on one contract.

The Sherer Franchise Offers: COMPLETE LINE OF CASES, COOLERS AND BOXES.

NEW EQUIPMENT constantly under development, opening new fields for compressor sales.

LAYOUT DEPARTMENT—layouts for store modernization program without obligation.

ADVERTISING—Sherer Equipment advertised by mail and in leading trade publications.

Write for catalog and franchise details, mentioning territory desired.

SHERER-GILLET CO. • MARSHALL, MICH.

Manufacturers of Refrigerated Display and Storage Equipment



Chieftain

Message
No. 11

MANUFACTURERS! YOUR PRAYERS

ARE ANSWERED, THE

TECUMSEH HERMETIC IS HERE

TECUMSEH PRODUCTS CO., TECUMSEH, MICH.



REFRIGERATION PRODUCTS



"Originators of the Cross-Fin Coil" with

HEAVY CONTINUOUS ALUMINUM FINS

STAGGERED TUBING

IMBEDDED FIN TO TUBE CONTACT

SILVER SOLDER BOND

849 MODELS—ONE TO FIT YOUR

REQUIREMENTS

PROMPT SHIPMENTS

Write for Literature or See Your Local Jobber

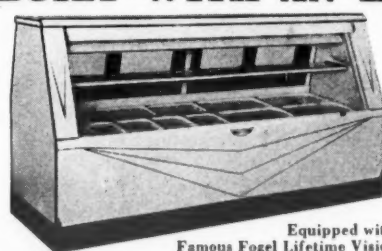
LARKIN COILS, INC.

General Office and Factory

519 FAIR STREET, S. E., ATLANTA, GA.

NEW YORK FACTORY, 102 FIFTH AVE.

BUILT WITH AN EYE TO THE FUTURE



Equipped with Famous Fogel Lifetime Vision

Fogel equipment is built to last—not only to the end of the guarantee period—but to serve efficiently and economically for many years.

A Fogel sale makes friends—Fogel's lasting dependability keeps friends. Inquire today about our full line of refrigerated food storage and display equipment. Interesting distributor proposition to qualified firms.

FOGEL REFRIGERATOR COMPANY Since 1899
16th & Vine Sts., Phila., Pa.

Modern Refrigeration Shafts

For reliable, accurate, time-tested service, Shafts by "MODERN" are regarded as leaders in the refrigeration and air conditioning industry. Send us your blueprints and specifications for estimates on your Shaft requirements.

MODERN MACHINE WORKS, INC. 5353 S. Kirkwood Ave. Cudahy, Wisconsin

HENRY

ABSO-DRY

Pressure Sealed

DEHYDRATION

STRAINER

TYPE 732



A new combination dryer and strainer. Dehydrant is confined in a felt sack inside a fine mesh brass screen, therefore particles cannot escape into system. Soldered brass shell with dispersion tube. Vacuum dried and pressure sealed. Choice of 5 dehydrants.

Write for catalog **HENRY VALVE CO.** 1001 19th St., SPALDING AVE. CHICAGO, ILLINOIS

Death of Arnold H. Goss Recalls Important Events In Development Of Electric Refrigeration Industry

(Concluded from Page 2, Column 5)

the present management in spite of his loss of position. On the contrary, he expressed great satisfaction with the progress of the company under the management of George Mason.

He was hurt by the loss of a suit to recover \$427,000 which he had advanced to Kelvinator from personal funds back in 1926 and 1927, but he accepted the verdict of the court with good grace.

ACTIVE IN FIRST ELECTRIC REFRIGERATION COUNCIL

Mr. Goss was one of the small group of top executives which formed the first Electric Refrigeration Council. The first meeting of competitive managements took place at Waldenwoods, Mich., a unique institution which had been built by G. Robert Crouse, who was then president of the Nizer Corp. In addition to the Kelvinator and Nizer executives, those connected with Frigidaire and Servel were invited to this first informal gathering held in the spring of 1925.

Mr. Goss was also present at the second meeting held in the fall of 1925 at Delco Dells, Dayton, Ohio, with Frigidaire as host. General Electric and Westinghouse had representatives at this meeting although neither of these companies had formally entered the refrigeration field.

The third meeting, held Jan. 28-30, 1926, at the Westchester Biltmore, Rye, N. Y., under the auspices of Servel, led to the formal organization of the first Electric Refrigeration Council. This organization later developed into what is now the Refrigeration Division of National Electrical Manufacturers Association.

It was at these meetings that the general policies of the electric refrigeration industry, which have since proved to be so eminently successful, were formulated and adopted. A fund of \$100,000 was voted at the Westchester-Biltmore meeting for a cooperative educational campaign. Six companies (Kelvinator, Nizer, Frigidaire, Servel, General Electric, and Copeland) each subscribed an equal share of this fund.

FROM THE "INDUSTRY PIONEER NUMBER" OF THE NEWS

Note: The following article, published in the "Industry Pioneer Number" of the NEWS two years ago, is reprinted in full. It was written by a staff reporter after a personal interview with Mr. Goss.

According to A. J. Curley, who was confidential secretary to Mr. Goss for many years, Mr. Goss carefully read the article in the NEWS and was well pleased with it.

Mr. Curley is now secretary-treasurer of "A. H. Goss-Investments," the holding company which handles the numerous properties in which Mr. Goss was financially interested. His office is in Room 3-166, General Motors Bldg., Detroit.

Reprinted from AIR CONDITIONING & REFRIGERATION NEWS, Oct. 7, 1936.

Goss Relates Story Of Kelvinator's Early History

By W. H. Long

One afternoon during the early part of 1913, two men carrying rolls of blueprints entered the Detroit office of A. H. Goss, at that time director of the Chevrolet Motor Co. (He is now regarded by the electric refrigeration industry as one of its earliest pioneers, as he was founder of the original Kelvinator Co. and first president of the Electric Refrigeration Corp.)

E. J. Copeland, one of the two visitors, an engineer prominent in Detroit manufacturing circles, introduced his thin, nervous companion as Nathaniel B. Wales, an inventor originally from Boston and then residing in Detroit.

Wales' blueprints outlined the de-

sign for an absorption machine for domestic electric refrigeration—then an almost unheard of piece of apparatus—on which he had been working for several years after his graduation from the Massachusetts Institute of Technology, where he had first become interested in the idea of refrigeration through mechanical means.

Recalling that day more than 23 years ago, Mr. Goss says that his first impression of Wales was that of a man "more full of ideas than a pin-cushion full of pins."

Wales Needed Capital

The proposition as outlined to Mr. Goss was that Wales had in the process of development a refrigeration machine which he was confident would work, but capital was needed to supply machine materials and shop facilities for further work on the apparatus.

At that time, Mr. Goss was associated with W. C. Durant in various branches of the General Motors Corp., acting primarily, he says, as a "negotiator" for the infant automobile firms under Durant's control.

After a lengthy conference on the subject of the new machine, Mr. Goss authorized Wales to proceed with the building of the model compressor, providing that expenditures did not exceed a specified sum. Mr. Goss advanced the money to Wales, and in a few months the first machine was ready for operation.

First Machine Rejected

From his small shop on Franklin Street, Detroit, Wales one day called Mr. Goss over to see the completed machine. Mr. Goss says he took one look at the inventor's huge mass of tubes, wires, and heavy parts, and told Wales not to even bother starting the thing up.

Wales, crestfallen, wanted to know why.

Mr. Goss replied that what he was interested in promoting was a refrigeration machine for home use, not for a factory or castle where space requirements were negligible. Besides, the unit used anhydrous ammonia—a highly explosive gas requiring heavy pressure to effect condensation—and it was therefore both impractical and dangerous.

Then Wales remembered a smaller compressor he had designed which discharged cool compressed air into the ice compartment of a refrigerator cabinet. Development of this compressor, with reduction to a still smaller size and using sulphur dioxide as the refrigerant, was financed by Mr. Goss.

Problem of Thermostatic Control

He relates that the main problem encountered by Wales, Copeland, and himself was the development of a thermostatic control to make the machine automatic in operation. In 1914, a diaphragm-type thermostat was perfected after the expenditure of \$150,000. This control actuated a switch by expansion and contraction, according to the relative temperature of the air inside the cabinet.

Mr. Goss says that Copeland took charge of production in 1914, and by 1917 the problem of gas leaks and control were mastered.

Absorb Nizer Co.

In 1914, manufacturing operations were begun under the brand name "Kelvinator," a name invented by the New York advertising agency of J. Walter Thompson and Co., to whom Mr. Goss had suggested the name of Lord Kelvin, author of the laws of heat transference, in discussing possible names for the new company. Mr. Goss was named president of the firm.

Kelvinator meanwhile, had absorbed the Nizer Co., makers of ice cream cabinets, a business in which the parent firm was becoming interested. This company also made a few machines for their boxes, and was associated with the Arctic Co., another ice cream cabinet firm, which was also absorbed by Kelvinator.

Note: The above paragraph appears to be misplaced since the Nizer Co. was not consolidated with Kelvinator until shortly before the Electric Refrigeration Corp. was organized Jan. 1, 1926. The NEWS files contain literature published under the name of Nizer Corp. as late as August, 1926.

By Sept. 24, 1917, the company was incorporated as the Kelvinator Corp. of Delaware.

First Kelvinator electric refrigera-

tors were placed on the market in Detroit during the spring of 1918; and 67 units were sold the first year, Mr. Goss says. By 1920, more than 600 machines were installed in Detroit, using the "remote" compressor installation—the compressor in the basement or elsewhere, with the cabinet in the kitchen.

During the early period of Kelvinator's development, 1913-1920, Mr. Goss states that he supplied most of the capital for the company's financial operations.

Divisions Joined Together

Physical expansion of the company continued rapidly during the first decade of its existence, and on Jan. 1, 1926 the Kelvinator, Nizer, and Leonard divisions were pooled in the formation of the Electric Refrigeration Corp., with Mr. Goss as president.

One year later, on Jan. 1, 1927, Mr. Goss retired as president of the Kelvinator Corp., and was succeeded by C. K. Woodbridge. Mr. Goss became chairman of the board of directors at that time. On August 1, 1928, Mr. Goss resigned this position, but continued as a director of Kelvinator.

He severed his long connection with Kelvinator on Dec. 5, 1932, when he resigned his directorship.

In expressing his opinion of the future of the electric refrigeration industry, Mr. Goss states that the present wired home market penetration of about 33% should be much greater.

Although he still maintains business offices in the Fisher Building, Detroit, Mr. Goss's time is mainly spent on his farm near Ann Arbor, Mich., where he raises prize cattle as a hobby.

Characterizing himself as a "plain dirt farmer," he has seen the industry grow beyond all expectations of its founders in the days 23 years ago when Nathaniel B. Wales was laboring on the first Kelvinator in a second story shop on Franklin street.

Corrections Requested

Note: The NEWS invites readers to correct any errors which may appear in the above historical record. Associates of Mr. Goss and other industry pioneers are especially requested to furnish additional data on events which occurred before the NEWS was established in 1926.—Publisher.

Virginia Dealers Sell \$104,673 In Sept.

ALEXANDRIA, Va.—Seven hundred and ninety-nine major appliances, with a total dollar value of \$104,673, were sold by dealers in the territory of Virginia Public Service Co. during September, according to statistics compiled by the utility.

Household refrigerators led the September sales list with 394 units, with washers second with 268 units. Electric range sales totaled 80 units, and water heater sales 23 units. Nineteen installations of commercial refrigeration equipment were reported, as were 15 ironer sales.

For the first nine months of this year, sales of refrigerators, ranges, and water heaters amounted to 6,985 units, as compared with 8,588 units during the same period of last year. Refrigerator sales alone were 5,926 units this year, compared with 7,339 last year; range sales were 768 units, compared with 935 in 1937; and water heater sales amounted to 291 units, as against 314 last year.

In September sales, northern division of the company led with 163 refrigerators, 74 washers, 33 ranges, and 12 water heaters. Ninety-nine refrigerators were sold in the central division, and 95 in the eastern section of the utility's territory. Central division also accounted for 92 washer sales, to lead all sections in this respect.

Independent Air Filter Co.

Names 5 Representatives

CHICAGO—Appointment of five new representatives for its line of air filters has been announced by Independent Air Filter Co. here.

New representatives are: James L. Brown, Memphis, Tenn.; Crawley-Gorbandt Co., Atlanta; Factory Sales & Engineering Co., New Orleans; K. J. Murray, Omaha, Neb.; and W. A. Witheridge, Saginaw, Mich.

CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words four cents each. Three consecutive insertions \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS WANTED

MECHANICAL ENGINEER—16 years' experience in household refrigeration and air conditioning; cabinet and unit design, developments and tests. Experienced in dealer and distributor service contacts. Capable of advancing new ideas on major household appliances and following through with design and production. Box 1081, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

TRAILER FOR SALE. Reo Coupe-Detroit Aero Trailer. Forty-two feet overall. First class running condition. Built for household appliance merchandising. Bargain price. RACKLIFFE BROS. CO., INC., 250 Park Street, New Britain, Conn.

REPAIR SERVICE

DOMESTIC CONTROLS repaired: Ranco pencil \$1.75, Ranco box \$2.00, General Electric \$2.00, Tag \$2.00, Cutler-Hammer \$2.00, Penn \$2.00, Bishop Babcock \$2.50, Majestic \$2.50, Penn magnetic \$2.50, G. E. Frigidaire \$2.50. In business over 20 years. Our name is our guarantee. UNITED SPEEDOMETER REPAIR CO., INC., 436 West 57th Street, New York City.

WORLD'S LARGEST Rebuilders of hermetic units. Specializing in Majestic,

G. E., Westinghouse, Grunow, Frigidaire, Kelvinator, Gibson, Crosley, Norge, Spar-ton, Leonard, Coldspot, Stewart-Warner, etc. Dealers exchange price \$30.00 with 18 months' written guarantee. Parts for Grunows and Majestics. G & G GENUINE MAJESTIC REFRIGERATOR AND RADIO PARTS SERVICE, 5801 Dickens, Chicago.

ELECTRIC MOTOR repairing, armature and stator rewinding on all refrigeration and air conditioning motors, A.C. or D.C. Pick-up and delivery service. All work guaranteed. Motors bought and sold. Burnt out motors bought. Prices on request. COMMERCIAL MOTOR SERVICE CO., 601 West 26th St., New York, N. Y.

CONTROL REPAIR service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

GENERAL ELECTRIC and Westinghouse hermetic units rebuilt. Guaranteed unconditionally for one year and returned to you refinished like new. Units are entirely disassembled in our large modern shop, tested through every step of production during rebuilding with the most complete test equipment for accurate work, then subjected to exhaustive running tests under actual operating conditions. Each unit measures to exacting standards after rebuilding. Prices \$30.00 on General Electric DR-1, DR-2, and Westinghouse; \$35.00 on General Electric DR-3. Quotations furnished on other models. Quick service—guaranteed work. REFRIGERATION MAINTENANCE CORP., 321-27 East Grand Avenue, Chicago, Ill.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

The NEW Percival

NO. 1000





UNITIZED CASE!

With Refrigerating Unit!

FACTORY INSTALLED... FACTORY TESTED READY TO OPERATE ON ARRIVAL

Note these superior features... balanced refrigeration... temperature control... controlled high humidity... genuine porcelain finish... corkboard insulation... abundant storage space... magnetic display... no-sweat front glass... three-way service cabinet with scale stand, wrapping counter and paper roller, and unit housing.

The Percival Unitized Case is built to the high standard of all Percival equipment. Due to its popularity and volume production, it is offered at an extremely attractive price.

52 Years of Service 1886-1938

MILLS

COMPRESSORS

for Commercial Use

Mills Novelty Company • 4100 Fullerton Avenue • Chicago, Illinois

HI-LO — a new type of CHARGING and TESTING UNIT



WHEN UNIT IS CONNECTED TO BOTH SIDES OF THE SYSTEM, THIS GAUGE MAY BE USED AT WILL FOR READING HIGH AND LOW SIDE PRESSURES.

WHEN CONTROL IS POINTED STRAIGHT UP, REFRIGERANT IS FREE TO BY-PASS FROM HIGH TO LOW SIDE.

AUXILIARY NEEDLE VALVE CONTROLS CHARGING AND PURGING PORT.

MASTER CONTROL HANDLE. POINTING ON THIS HANDLE INDICATES WHICH PORT IS OPEN AND SOURCE FROM WHICH GAUGE READING IS OBTAINED.

No. 500-C Imperial Hi-Lo Charging and Testing Unit, complete with 2 1/2" gauge. Each \$5.25

No. 501-C Same, less gauge. Each \$3.35

Combines all the advantages of a double gauge unit with the lightness, compactness and ease of handling of a single gauge unit...

This is an entirely new type of charging and testing unit which uses a single gauge and a single valve for reading pressures on both sides of the system. It is totally different in operation from the ordinary single gauge unit, and it will do everything a double gauge unit will do.

Offers the following special advantages:

1. When connected to both sides of the system it permits reading the pressure on either the high side or the low side at any time with a single gauge and a single valve.
2. It permits by-passing at any time without capping the charging and purging port.
3. It may be used separately on either the high side or the low side with exceptional convenience.
4. It is considerably lighter than other units for similar work, fits into closer space and is easier to carry.

This unit can be used for the same variety of purposes as any double gauge or any single gauge unit. Method of operation is simple and convenient (see illustration at left). Once you try the new HI-LO unit we believe you'll agree that it's the handiest and most efficient charging and testing unit you ever used!

Write for new circular.

IMPERIAL BRASS-MFG. CO.
565 S. Racine Ave., Chicago

ORDER FROM YOUR JOBBER

IMPERIAL Air Conditioning and Refrigeration Products
 VALVES • FITTINGS • TOOLS • CHARGING LINES • FLOATS • STRAINERS • DEHYDRATORS